

THE COUNTRYSIDE COMPANION



ROBIN REDBREAST

A robin surveys the scene on a winter morning from its perch on a frost-rimed hogweed plant.

THE COUNTRYSIDE COMPANION

"And we will all the pleasures prove That hills and valleys, dale and field And all the crassy mountains yield."

EDITED BY
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A NORTHERN RIVER

High Force, on the River Tees, one of the noblest falls in the country, is here viewed through a window in the woods.

INTRODUCTION

by TOM STEPHENSON

ROM the early days of the industrial revolution there has been an increasing tendency to separate great masses of mankind farther and farther from their natural surroundings, to congregate them in towns and cities where, for the greater part of their lives, they are deprived of the simple yet most

satisfying pleasures of the countryside.

In recent years, however, there has arisen a widespread recognition of the need for contact with the land from which many of us have been too long uprooted. Never have there been so many people taking every opportunity to escape from town to seek recreation (re-creation we might say) in places where rural peace still endures.

Much of this flight from the ugliness we have created to the beauty we have not yet marred is, no doubt, to be explained by shorter working hours and increased facilities

for travel. Yet the driving force behind it all is probably a growing realization of the need for closer touch with Nature for the full enjoyment of a healthy and happy life.

Professor G. M. Trevelyan has said: "Without vision the people perish and without sight of the beauty of nature the

spiritual power of the British people will be atrophied. The longing, too often a thwarted longing, for natural beauty and the great unspoilt spaces, is a most touching and a most hopeful thing in the modern city population. The condition of any real value in modern city life is holidays spent in the country. How our

people long for them and save up to get them!"

Thus we are discovering that the sights, and sounds. and scents of the countryside meet some elemental longing, and give greater delight than any artificial pleasures can provide. Even man born in town. and bred of several generations of townsfolk, may find that a field of rippling corn, or grass ready for mowing, is a thing of joy, and that the spread of meadow and pasture, the rise of a hill, or the long, sleek flowing lines of the downs and the quiet peace and beauty of the



MARKET DAY

Many a sleepy little town comes to life on market day when the people come in from the surrounding countryside. A scene

in Richmond, Yorks.

valleys, stir in him a feeling of satisfaction and of being at one with the land.

The tuneful song of thrush or blackbird, the gay piping of the lark, or the less melodious, but still attractive, cry of the plover, or the peculiar wail of the curlew across a lonely moor or marsh. leave none of us entirely unmoved So the smell of moist earth or of leaf mould in autumn woods, the fragrance of primroses and cowslips, of honeysuckle and meadowsweet, the scent of the hayfield or a bank of wild thyme, and many another subtle aroma, may by some strange alchemy lift us out of ourselves, and turn a drab world into an arcadia.

This is not a natural state of mind, for the interest and the desire for knowledge of such things is present in all of us to some degree, although it may be stunted or deflected by our way of life. After all, it was our rural forefathers, and not the scientists, who gave those homely names to the many living things around them.



APRIL MORNING

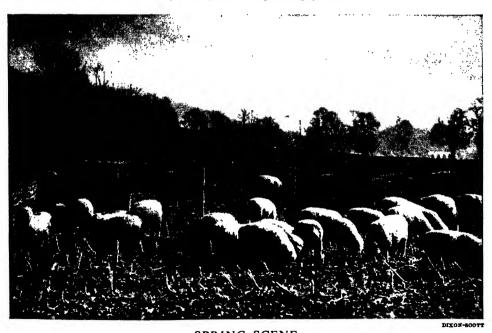
Snow-white cherry blossom and billowing sunlit clouds in a blue sky typify an April morning and the beauty and delight of springtime in England.

Unfortunately, most of us have been so long divorced from natural surroundings that we have grown up woefully ignorant of the infinite variety of interesting and beautiful features to be found in the country. We are like the woman who walked through the fields in gloves, "missing so much and so much." We may be able to distinguish a daisy from a dandelion, and a primrose from a bluebell. Probably we know the thrush and the blackbird by sight, though we cannot recognize them by their songs. For the rest they are regarded as just so many flowers, insect, birds and trees.

It was obviously men of the land, and not of the study, who named many of our common flowers such as shepherd's purse, ox-eye daisy and traveller's joy, and there is rural fancy in names like white or yellow bedstraw, ragged robin, and fool's parsley. Similarly, the names of many birds had their origins in the minds of country folk. Magpie, jackdaw, and swift are too simple to have been named by learned investigators, and it was obviously a man accustomed to being out of doors in all weathers who named the stormcock. Yet other names, such as curlew and peewit, are but rustic



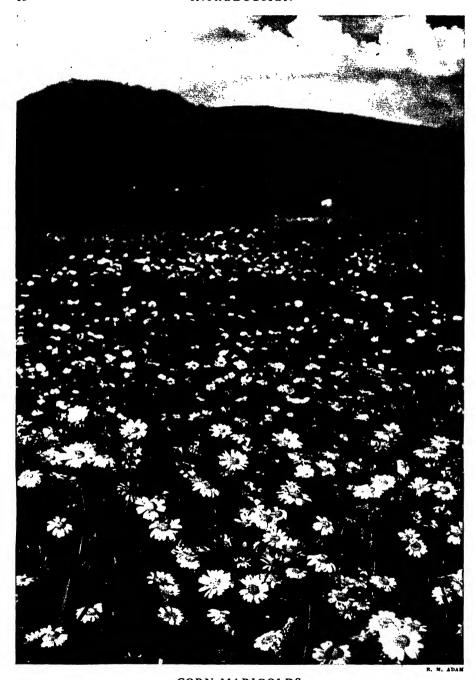
SAND-MARTINS
A group of sand-martins ready for their migratory flight southwards, and apparently in conference, make a pleasing picture.



SPRING SCENE

Sheep enjoy the spring sunshine and the ploughman turns the moist earth in long furrows.

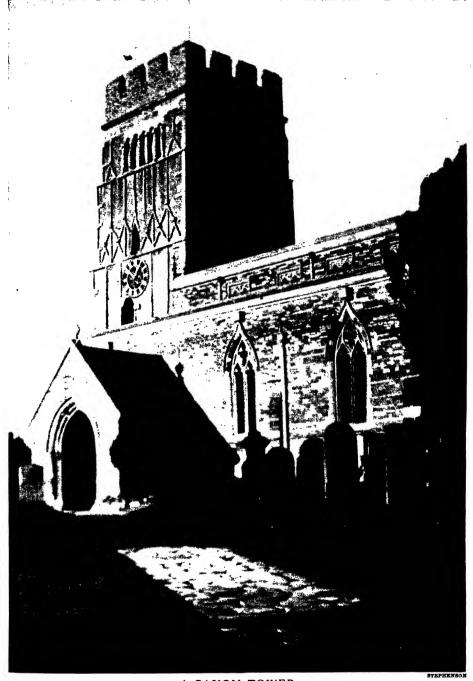
A scene near Box Hill in Surrey.



CORN MARIGOLDS

Also known as the ox-eye daisy, and in Scotland as the gowan, this flower is found in cornfields and waste places from June to October.

Service .



A SAXON TOWER

The parish church of Earls Barton, Northamptonshire, with its striking Saxon tower.

was proper to be a construction



ON A NORTHERN RIVER

At Barnard Castle the Tees flows beneath a picturesque medieval bridge at the foot of the ruined stronghold built in the twelfth century, by the Norman, Bernard Baliol.

attempts to imitate the calls of those birds.

It may be said that the thrush will sing none the sweeter because we know its name, or that the violet will pour forth no greater fragrance because we can identify it. That is true enough, but the man who has learned the names of such things will usually take greater interest in them, and notice them more than he did before. In all probability, having learned to recognize one or two species, he will seek to know others.

Merely to know the name of anything helps to fix it in the memory. It is obviously easier to think of a thrush than of "that bird we heard singing on the bough of a tree that day we walked through the fields from Startham to Stillwell." Moreover, few are content with names, but will learn to link with

them the characteristics of the thing named, as well as some knowledge of its life and habits.

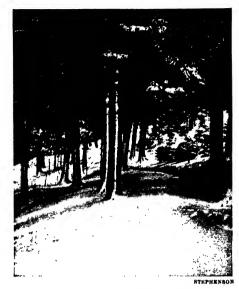
In the following chapters an attempt has been made to help the inquiring wayfarer, to indicate to him some of the delights he may find in the country, and to suggest ways in which he may add to the interest and pleasure of his journeys. It is not pretended that the field has been covered in an exhaustive manner, for that would require a library rather than a single volume. Nor is it intended to suggest that the reader should make an attempt to become astronomer, geologist, botanist, ornithologist and zoologist all in one. Life is too short for that, and for most of us would mean spending precious hours of leisure poring over textbooks instead of being out in the open air and wandering over the fields.

The aim has been rather to present a survey of countryside attractions, and to outline some of the many fascinating features one may hope to find in a day's journey, and to help the reader by means of the illustrations to identify some of the flowers, trees, birds, insects, animals, and other objects he is likely to see in his wanderings.

It is hoped the book will prove of value to all wayfarers, that it will add greater pleasure and interest to their wanderings, enabling them to make the most of their days in the country, and suggesting many new fields worthy of exploration. At the same time the different chapters are intended to appeal to the general reader, the stay-at-home, and those who have not realized the beauty and delight to be found in this pleasant land.

Some of these people, however, at present sadly unconscious of all that they are missing, may perhaps be encouraged to venture forth:

"Away, away, from men and towns To the wild wood and the downs."



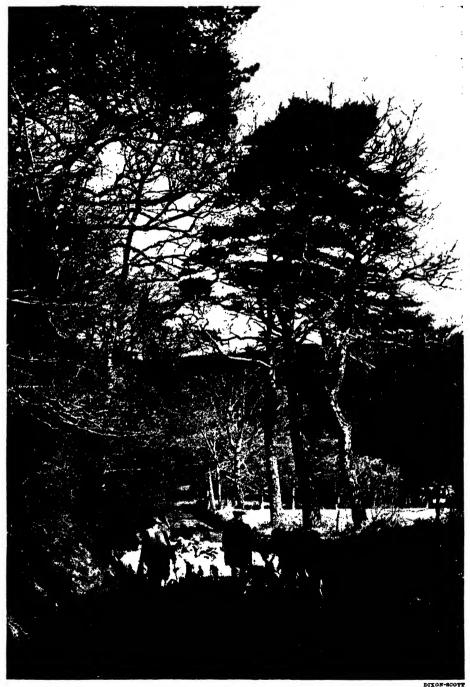
WINTER WOODLANDS

The beauties and pleasures of the countryside are not limited to the summer months for there are many joys to be found afield on wintry days. Above is the woodland path to High Force in Teesdale.



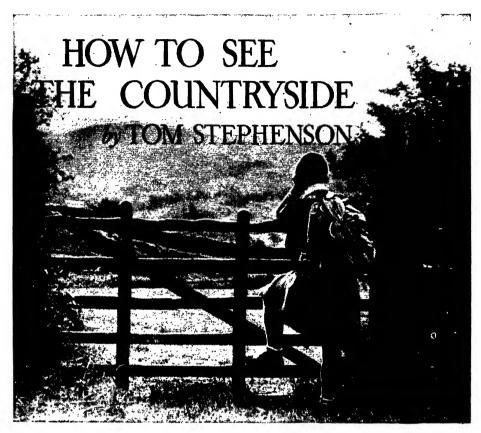
AMONG THE HILLS

Amid the lonely grandeur of the Highlands a trailer caravan provides a most useful mobile home, obviating the nightly quest for accommodation.



DEVON SHEPHERDS

Shepherds drive their sheep along a Devon lane on a sunny February day.



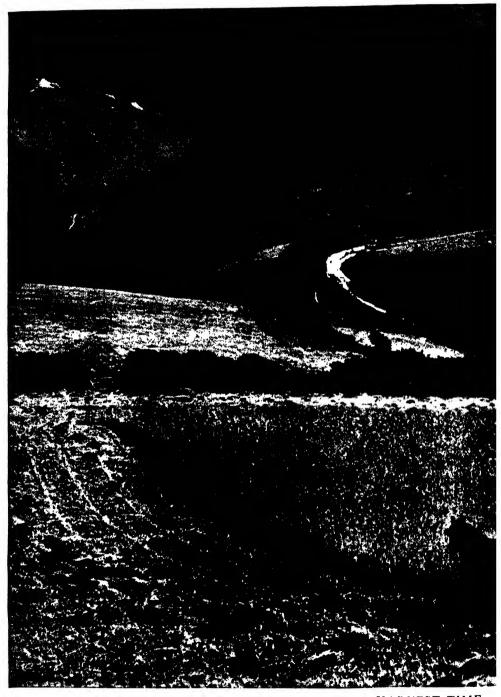
HEN WE set out to seek the beauty and attractions of Britain we are soon compelled to revise our geographical conceptions. We cannot, of course, extend the boundaries of the island nor can we raise its hills to Himalayan heights. Yet, though the acreage may remain a constant, a little experience reveals that there are more noteworthy features in the country than we would have believed it possible to pack into so small a space. A few random journeys will suffice to convince us, even though we may be blessed with ample means and abundant leisure, that our days in the land are not likely to be long enough to sample all the treasures available.

There are, for instance, about 180,000 miles of roads in the country. Of footpaths and bridleways there is possibly an

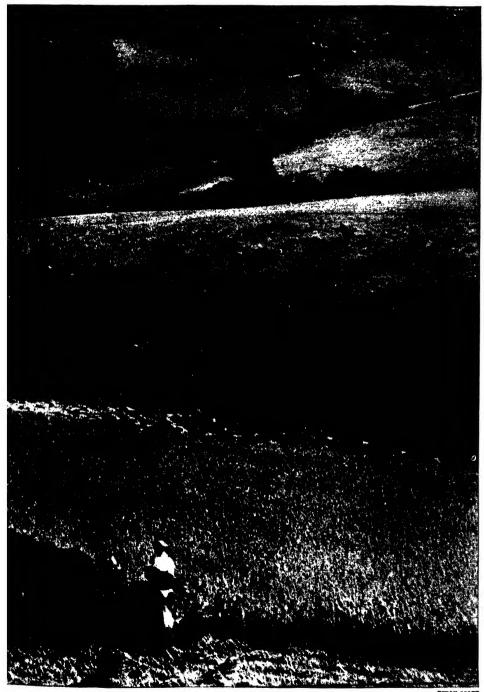
even greater mileage and, in addition, there is a considerable extent of open country, of downs, mountains and moorland where we may roam at will.

Our travels, however, are not to be measured in miles but in impressions gained and pleasures found in field and woodland, in village and hamlet, along the shores, by river and stream or on the mountain tops. The music of running water, the whisper of the wind in a downland beech clump; the songs of thrush and blackbird, or the cry of the curlew on the moors; the scent of hawthorn or honeysuckle or new-mown hay, these rather than milestones are the things we shall remember.

A dreamy hamlet in the vale with thatched cottages around a grey old church, an old tithe barn or a market cross; a crumbling castle or abbey ruin,



HARVEST TIME
A delightful scene in the famous



N EXMOOR pring Doone country of Exmoor.

or the cool dim splendour of a cathedral nave; by such features will our course be charted and our journey reckoned.

While mile-cating is not our purpose some travelling we must do, and the question at once arises as to how it shall be accomplished. Apart from public transport services, the three obvious methods are motoring, cycling and walking. Each of these we may consider in turn, it being remembered we are discussing them solely as means of sight-seeing and not as modes of travel.

First then the motor car. Used intelligently this vehicle can be an invaluable asset, extending the field of survey and providing a ready and independent means of transit. With it you may go as you please without restrictions of time-tables or rigidly defined routes. Should you be in that mood, there is no reason why you should not, in the words of G. K. Chesterton,

travel " to Birmingham by way of Beachy Head."

The car can be most useful, for instance, in a first general survey of an area, enabling us to visualize the lie of the land, to note to what extent certain features are common or how others vary.

Hazy Impressions

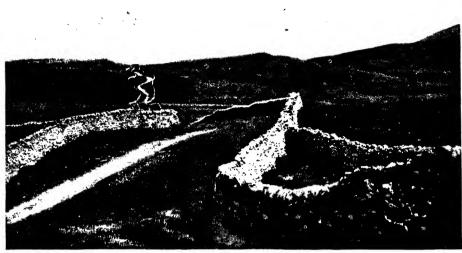
There is, however, always a danger of endeavouring to cover too much ground. We may drive from London to Edinburgh in ten, twelve or fifteen hours. Such a journey might be testimony to the car or to the driver's endurance, but from the point of view of sightseeing, it would be a wasted day, producing nothing but hazy confused impressions, or what we might term topographical indigestion.

Apart from the impossibility of giving any adequate conception of the countryside, fast travel usually means following



THE PATH TO THE HILLS

Stockley Bridge, at the head of Borrowdale in the Lake District, is crossed by thousands of people in the summer months for it is on the way to Sty Head and the heights of Great Gable and the Scafell Pikes.



ACROSS THE PENNINES

STEPHENSON

A twisty moorland road from Kettlewell, in Wharfedale, to Coverdale and Wensleydale. A delightful route for walkers and possible for cyclists who do not mind some rough going.

the major roads. These highways may provide the shortest or quickest line between two points, but they run their course with woeful lack of discrimination between beauty and ugliness, showing, if anything, a preference for the latter because of its commercial associations.

Consider that road to Edinburgh, the Great North Road, proudly designated At. If you have a road atlas handy trace the line by Baldock and Biggleswade, across the cabbage fields of Bedford and Huntingdon, and on by Buckden to Stamford, with its many churches and grev old buildings of Cotswold stone -one of the few gems on this road. By long straight lengths, part of the Roman Ermine Street, Grantham is reached. Then across Lincolnshire into Nottinghamshire, by Newark's ruined castle, and red-roofed Tuxford we come to Doncaster. Skirting the edge of industrial Yorkshire, the road continues northwards by Wetherby and Boroughbridge to Scotch Corner, and over the Tees into Durham county. Away through the mining districts, actually turning aside from the grand uplifted pile of Durham Cathedral, the road runs

on to the Tyne and coal-black Newcastle.

With glimpses of Northumbria's shaggy fells on the one hand and the North Sea on the other, we continue by Morpeth to Alnwick, once the home of the warlike Percys and with Hotspur's Gate, still straddling the road.

On the way to Berwick we may, if we look at the right moment, gain a brief view of Holy Island. Over the border the road runs near the coast for a few miles, turns inland for a spell, touches the sea at Cockburnspath, and finally strikes across East Lothian towards the dark mass of Arthur's Seat which locates Edinburgh and journey's end.

Follow Your Fancy

Now consider what we may make of the journey to Edinburgh if we follow our fancy and diverge east or west to places of note. If we confine our wanderings to a belt extending to twenty miles on each side of the road we may, without difficulty, find sufficient to engage our attention for a week, and even then be able to make no pretence of having exhausted the possibilities.

Here are a few places chosen at random.



IN THE HIGHLANDS

A winding road in Sutherland near Loch Assynt, with the slopes of Quinaig in the distance, Motorists need to proceed with caution on many of these Highland roads which are too narrow for passing except in certain places.

At Eaton Socon, fifty-tive miles out of London, Cambridge with all its attractive architecture, is just within our limit. From Cambridge the Roman road, Via Devana, leads us by Godmanchester to Huntingdon, where perhaps we may make a further diversion to visit St. Ives, and the pretty villages of Hemingtord Grey and Hemingford Abbots.

Peterborough Cathedral

Peterborough is but four miles from the road, yet few who travel northwards appear to be aware that so slight a deviation would enable them to visit the imposing cathedral with grand Norman nave and splendid West Front, and a history going back through the troubled centuries to the days of its Saxon founder. North of Peterborough lies Crowland with a fourteenth-century bridge standing dry in the middle of the town, and with ruins of an abbey originally founded in the eighth century.

Stamford, as we have remarked, is

one of the most attractive places on the Great North Road and should not be missed. Three miles out of Stamford and less than half a mile from the main road lies Tickencote, a secluded hamlet with a church possessing a splendid Norman chancel arch.

Many diversions are possible on the way to Grantham and Newark, and even though we pass them by, at Newark we must seriously consider whether we will leave Lincoln unvisited. A run of sixteen miles along the Roman, and perhaps pre-Roman, Fosse Way will take us to that ancient city, with its superbly placed cathedral, and its Norman castle and Roman arch recalling the very beginnings of our history. If we wish we may then proceed to Doncaster by way of Gainsborough, the St. Ogg's of the Mill on the Floss, where we may perhaps see the "eagre" or tidal wave come rushing up the Trent.

Through Yorkshire the Great North Road would appear to have been planned to avoid as far as possible the places of outstanding beauty and interest. York, with its medieval walls and gates and magnificent minster, is left on one side, and from Wetherby to the Durham boundary the road runs through pleasant but most uninspiring country, though the Pennines on the one hand, and the Cleveland and Hambledon Hills on the other are in sight and within easy reach.

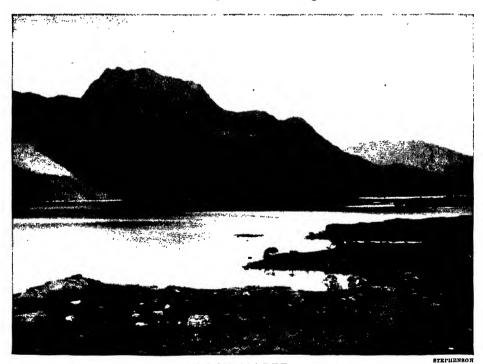
Pleasant Diversions

With very little trouble we may diverge to take York in our stride, and continue by little villages and market towns such as Easingwold, and Thirsk, and Northallerton, and the near-by Mount Grace Priory. Alternatively, we may turn westwards and find time to visit the stately ruins of Fountains Abbey, and to see Ripon with its Minster high above the red tiled roofs. Thence we might

continue into Wensleydale, and over the moors to Swaledale, and down that beautiful valley to romantic Richmond.

Still within our twenty mile limit we might journey by Greta Bridge (whence came Nicholas Nickleby on his way to Dotheboys Hall) and so to Barnard Castle which "standeth stately on Tees." The main road could then be rejoined at Durham, and he would indeed be a Philistine who allowed the modern by-pass to lure him from the grandeur of Durham Cathedral so splendidly placed on a promontory above the River Wear.

Instead of following A1 from Newcastle a westward route might be taken along the Military Road which marks the line of Hadrian's Wall to the North Tyne. Though we may exceed our limit by a mile or so, we are certainly justified in so doing to visit Chesters and the



LOCH MAREE

Even in the Highlands there are few roads providing such impressive beauty and grandeur as that running by the shores of Loch Maree in Ross-shire. In this view the bare rugged mass of Slioch is seen across the loch.

remains of Roman Cilurum. From there we may journey northwards across Redesdale and over the Simonside Hills, with grand views of the Cheviots, before we descend to the Coquet Valley on the way to Rothbury and back to Alnwick.

In Alnwick we shall find much to detain us before we turn to the coast to see the forlorn ruins of Dunstanburgh Lord Marmion "Proudly his red-roan charger trode." Flodden Field and Coldstream are also within our limit before we turn and cross A1 again on our way to the little fishing village of Eyemouth, and thence to the striking cliffs of St. Abb's Head.

Only a mile from the main road lies historic Dunbar whence came Edward II



YORKSHIRE PASTORAL

Many a peaceful scene is to be found just off the road. Above is such a spot at Beckermonds at the head of Wharfedale in Yorkshire. From here a narrow road climbs out of the dale and over the hills to Wensleydale while a pleasant grass-grown track leads to Ribblesdale.

Castle, and then the massive pile of Bamburgh Castle. From there we may view the Farne Isles and, remembering the story of Grace Darling, visit the tomb of that heroine in the village church. Not far from Bamburgh is the Holy Isle of Lindisfarne, and to that cradle of Christianity we might proceed.

Along the Border there is an attractive excursion up the valley of the Tweed to Norham Castle, where along the bridge

fleeing from Bannockburn, and where a few years later "Black Agnes," wife of the Earl of Dunbar, withstood a five months' siege by the English, and where in 1565 Mary Queen of Scots sought sanctuary after the murder of Rizzio.

Beyond Dunbar we leave the road again, and turn towards an ancient stronghold of the Douglases:—

"Tantallon's dizzy steep

Hung o'er the margin of the deep."



LANDMARK OF THE FENS

For miles around, Ely Cathedral is visible over the wide levels of the fens. Impressive as it thus appears, its splendour calls for a closer approach.



HIDDEN CORNERS

Instead of passing straight through a village it is often worth while spending a little time looking around. Many pleasant corners may be found which are not visible from the main street. This little bay-windowed shop, inn and church can be seen at Hadlow, Kent.

walker. He who travels on his feet has the feel of the earth beneath him, and a sense of being at one with the land, an experience denied to the cyclist insulated by his tyres.

"The secret beauties of Nature," says Professor Trevelvan, "are unveiled only to the cross-country walker. Pan would not have appeared to Pheidippides on a road. On the road we never meet the 'moving accidents by flood and field': the sudden glory of a woodland glade; the open back door of the old farmhouse sequestered deep in rural solitude; the cow routed up from meditation behind the stone wall as we scale it suddenly; the deep, slow, south-country stream that we must jump, or wander along to find the bridge; the northern torrent of molten peat-hag that we must ford up to the waist, to scramble, glowing warm-cold, up the farther foxglove bank; the autumnal dew on the bracken and the blue straight smoke of the cottage in the still glen at dawn; the rush down the mountain side, hair flying, stones and grouse rising at our feet; and at the bottom the plunge in the pool below the waterfall, in a place so fair that kings should come from far to bathe therein—yet is it left, year in year out, unvisited save by us and 'troops of stars.' These, and a thousand other blessed chances of the day, are the heart of walking, and these are not of the road."

Escape from Towns

Today there are probably more people walking for pleasure than ever before and there are many thousands of motorists and cyclists who use their machines as a means of escape from the towns and as a preliminary to a day's walking. Yet there are many who still think of walking as a painful laborious means of locomotion. To those who have cramped and

maltreated their feet in badly designed shoes, to those who have long been accustomed to riding everywhere, until their leg muscles have become flabby and weak, a short walk might well be a trial to the flesh.

For such people to start out on a twenty-five-mile walk, probably inade-quately shod, would indeed be folly, with sore feet and aching limbs as a certain consequence. With a few simple precautions and a little practice, however, anyone of normal wind and limb can achieve the condition in which a day's walk is a pleasurable exercise, as it naturally should be.

Comfortable fitting shoes or boots with reasonably stout soles and low flat heels are an essential. A few light hobnails in soles and heels are an asset (except on roads) and save a considerable amount of backsliding on grassy slopes. In moorland or mountainous country boots are more serviceable than shoes, and if you go in for the real rough stuff

you may require heavier armour than hobnails. Woollen stockings should be worn, and for strenuous days a pair of woollen oversocks as well, if boots or shoes are large enough. A lightweight rucksack or roomy pockets will carry a mackintosh or cape and sou'wester, sandwiches, maps and compass and camera, and that should be sufficient luggage except when touring. Then you will require toilet requisites, spare stockings and underclothing and a pair of light slippers or light shoes for the evenings, but don't pack a single thing that is not really necessary. A bulging rucksack speaks of inexperience rather than of a stout heart.

Easy Strolls

A few afternoon strolls of five to eight miles will soon tone up neglected muscles, and after that a leisurely day's walk of twelve miles should not produce undue fatigue. Soon fifteen or twenty miles may be accomplished, and for our



ROADSIDE SIGNS

There are many picturesque wayside signs offering a pleasant change from the conventional signpost. Here is one between Harting and Cocking, in Sussex, depicting St. Christopher, patron saint of travellers, bearing the infant Christ on his shoulder.

purpose there is little if any need to attempt more. In some of the wilder regions of Scotland it may occasionally be necessary to cover thirty miles in the day, but the average walker, when it should be required, finds himself able to achieve that distance without strain.

The objection that the walker may waste valuable time in mechanically slogging through dull country to reach places of interest has little weight

of a cyclist passing through Ogwen oblivious of the near-by Cwm Idwal, and we might equally well have written "motorist" instead of "cyclist." But what of the walker? Would he be more discerning or able to scent that hidden grandeur by some mystic power denied to other travellers? If he were a wise walker he would be carrying the Ordnance Survey tourist map of the Snowdon district. A glance at that sheet



HISTORY FOR VISITORS

The little village of Bentley in Hampshire has this useful feature by the wayside. A notice board in the form of an open book gives a large scale map of the district on one side and on the other a summary of the history of the parish.

today. When we start on a walking tour we are under no vow to avoid all other means of travel, and there are few places nowadays where one cannot resort to train or bus when it is considered advisable.

We mentioned above the possibility

would reveal Llyn Idwal only half a mile from the road. The contour lines forming a U-shaped recess, and bunching together at the head of the lake to indicate steep slopes; the thrusting spur of Glyder Fawr and the muscular shoulder of Y Garn; the shading representing sheer crags and the words Twll Ddu or Devil's Kitchen; these should be sufficient to suggest to him that here is scenery worthy of closer acquaintance.

Excellent as our Ordnance maps are, they cannot, of course, indicate everything of interest. They are primarily representations of the earth's surface. The same symbol serves to signify a church or chapel, whether it be a noble work of early English craftsmen or a drab brick building, or even a structure of corrugated iron erected in the last century.

Innumerable Features

How, then, are we to learn what there is to see and where it may be found? Other chapters in this book are intended to develop the powers of observation, but we cannot attempt to catalogue all the innumerable features of interest to be found in the land.

There is, however, a wide and varied, and constantly growing wealth of topographical literature available today. This includes concise guide books, more discursive works and roving impressions, as well as learned compilations and detailed surveys of castles, abbeys, cathedrals, churches, bridges, and places of historic or prehistoric importance. Some of these volumes are written by specialists for specialists, and if these are not to our taste we shall have little difficulty in finding other books less erudite, but sufficiently informative to help us in planning a journey.

W. H. Hudson was against reading about a place before visiting it. He believed one should set out free from preconceptions, and prepared to find things for oneself. Read about them when you return, but get your own impressions first.

To some extent this is sound advice and there is added pleasure in unaided discovery, and in appreciating a find because it appeals to you, and not because some writer implies it is something you ought to admire.

By all means resort to this unplanned,

carefree wandering on occasion, but remember that, unless you have unlimited leisure this mode of travel has its drawbacks. Even though you have the eye of an eagle, and an encyclopædic mind, much must inevitably escape your notice.

Much of our wandering will be done on odd days and week-ends, but at holiday times we may consider longer journeys. Then arises the question as to whether we should explore a district from a centre or make a tour, staying in different places each night. Each of these methods has its advantages and attractions. Touring may be termed extensive as distinct from intensive exploration when journeying from a fixed centre.

On a tour one gains a broad view of the ground covered. It is possible to build up a mental map of the route followed, to see the country in proper perspective, and learn the main features of the land, and what we might call their geographical relativity.

Thus, we might make a journey from Dorset through the north-west corner of Wiltshire into the Cotswolds and across Oxfordshire, Northamptonshire and Rutland into Lincolnshire. Such a journey might lead us through one picturesque village after another, all having, beneath their local individuality, common characteristics due to the use of similar building stone.

Time-mellowed Villages

So from Lacock, in Wiltshire, to Stamford and the neighbouring village of Great Casterton, on the Great North Road, we should find attractive, time-mellowed villages built of a stone which weathers into harmonious tints of grey and cream and gold. We should, in fact, throughout the tour have been following the line of a belt of limestone which accounts for the family resemblance in the buildings of Cirencester and Chipping Campden, and Colly Weston and Castle Bytham.

The Lake District, small and compact as it is, is an area which cannot be easily explored from any one centre, unless

you are content with such views as may be obtained from the roads. There are many delightful places such as Patterdale, Borrowdale, Buttermere, Wasdale Head. Eskdale and Langdale, and in any one of these an enjoyable holiday might be spent. But if in one visit we wish to climb Helvellyn, Pillar and Great Gable, and the Scafell Pikes, and to roam by the shores of Ullswater and Derwentwater, to see Buttermere and Wastwater, Windermere and Grasmere, then we must plan a tour which will link up those attractions.

Likewise the Yorkshire dales, those long valleys winding into the Pennines, form another region best seen as a whole in a properly planned tour. Only thus can one appreciate the rival beauties of the dales, the sturdily built villages, the ruined abbeys and castles, the rivers and waterfalls, and the green hill-sides rising to the tawny, brown and purple moorlands.

Here, perhaps, a few words on the economics of touring may not be out of place. Travel costs will not concern the cyclist, except it be for a train journey at the beginning and end of the tour. The walker will have this expense, with possibly an occasional bus or train fare during the tour. The motorist must be left to make his own estimates, which will vary according to mileage done and the running costs and other expenses of his particular type of car.

Bed and Breakfast

In practice it will be found that there is a wide range in charges for accommodation. First of all, we may expect the cost of six nights' accommodation in six different places to be a little higher than if we had spent the same time at one address. In popular touring areas the general level of charges may be a little higher than in less-frequented districts. In addition, the amount we pay will depend to some extent on the degree of comfort or perhaps of luxury that we may require.

There are few places today where one



THE MARKET CROSS

An interesting survival to be found in many old places is the market cross, where the local people formerly gathered to buy and sell their produce. This example is to be seen in the little upland town of Alston, Cumberland.



HOSTELS FOR WAYFARERS

DAILY HERALD

There are now more than three hundred hostels in Britain, where cyclists and walkers, who are members of the Youth Hostels Association, can obtain beds for one shilling per night. Above is the Common Room at Holmbury St. Mary Hostel, Surrey,

cannot find accommodation of some kind, ranging from the homely cottage, farmhouse or small inn to the super hotel, with every conceivable luxury. Many houses, quite satisfactory in cleanliness and comfort, will provide bed and breakfast for five or six shillings and sometimes for as little as three shillings. In the smaller licensed houses the charges for the same service may vary from five shillings to eight shillings, and in the more opulent hotels one may have to pay double and sometimes treble those figures.

The motorists', cyclists', and ramblers' organizations all publish handbooks for their members in which are listed recommended houses and their tariffs. There are also several handbooks published annually which give lengthy lists of places where accommodation may usually be obtained at reasonable rates.

Occasionally you may find yourself in a village without an inn or other house showing signs of catering for the traveller. Even in such places an inquiry at the post office or village store will often reveal that a possible haven may be secured at Myrtle Cottage or Brockbank Farm.

If you are a cautious individual, uneasy unless assured of a bed for every night of your journey, you will book your accommodation in advance, but by so doing there is a possibility of making your programme too rigid, of leaving Bonnyburn unvisited because you are scheduled to sleep in Restwell that night. If on the other hand you are more happy-go-lucky, and don't mind a nightly search for lodgings, then you have the great advantage of travelling with less restriction, and being able to stage your journeys as fancy may decide. This.

after all, is not so risky as might be thought. With many years experience in all parts of Britain, I have never booked accommodation when on tour, and have never yet failed to find a bed for the night.

Before leaving this subject, mention should be made of the Youth Hostels movement. Despite the name, these hostels are not restricted to young people, youth in this instance being measured in spirit and not in years. Accommodation is available for members only, a privilege obtainable for two and sixpence per year or five shillings for those over the age of twenty-five. If you intend using the hostels, though, you must travel under your own steam, that is on a cycle or on foot. There are now more than three hundred hostels in Britain at which beds are provided for one shilling per night. Cooking facilities are available so that you may prepare your own meals, or, if preferred, you may purchase a meal from the warden in some, but not all of the hostels, for prices which may vary between one shilling and one and sixpence.

Any well conceived tour must inevitably reveal many an alluring spot where we may wish to linger, places where we feel that a passing hour is all too brief and where a day or a week or more would still be insufficient to gain the full flavour of the locality. That should always be borne in mind when deciding on a route, and allowance made for such possibilities. At least one day in each week should be left free for the greater enjoyment of such delights as it may be our good fortune to discover during our travels.

Some places you will find to which you will desire to return again and again, places where you may wish to spend a complete holiday just roaming round the neighbourhood, prying into all the out of the way corners, seeing the same scenes in all weathers and scasons until you feel you are really intimate with the district. To make such discoveries and to gain that intimacy is evidence that you are travelling wisely, developing your powers of observation and appreciation, and gathering for yourself a store of lasting memories of very pleasant journeyings.



STEPHENSOI

THE GOOD COMPANIONS

MAKING THE MOST OF THE MAP



Ror most people a map is an attractive document. Besides its actual use for guidance, it is such a well devised thing, so compact and informative, that it may engage us time and again in recreational study of its innumerable details.

R. L. Stevenson found it hard to believe that there are people who do not care for maps. "The names, the shapes of the woodlands," he wrote, "the courses of the roads and rivers, the prehistoric footsteps of man still distinctly traceable up hill and down dale, the mills and the ruins, the ponds and the ferries, perhaps the Standing Stone or the Druidic Circle on the heath; here is an inexhaustible fund of interest for any man with eyes to see or twopence worth of imagination to understand with."

While a map has an appeal for the average man, and while there can be few incapable of reading its broader features, yet there are undoubtedly many who do

not fully appreciate all the information available in a well produced map.

The score of a musical composition would convey little if anything to one unskilled in reading such a work, and it is so with a map.

If we are to understand all that the map maker has so skilfully depicted we must become familiar with the notation he uses. Fortunately, this is no difficult task and any one with a little application may soon acquire the art of reading with facility all that the map has to convey.

In the first place, we nest remember a map is not a picture but a plan. If we drew a plan of a room and its contents, then a cube standing on the floor would be represented by a square, and a cone by a circle and any irregularly shaped piece of furniture by an outline representing its base.

Similarly with a map, if, for instance, there were such a thing as a perfectly conical hill, then it would be depicted on

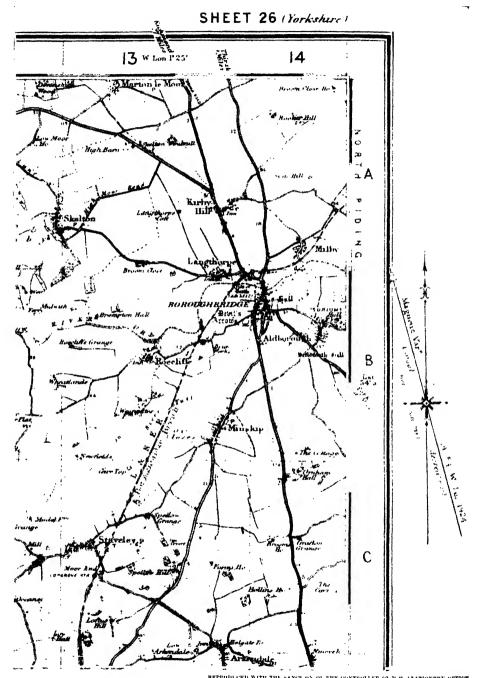


Fig. 1. Part of Ordnance Survey map reproduced to scale of one inch to mile.

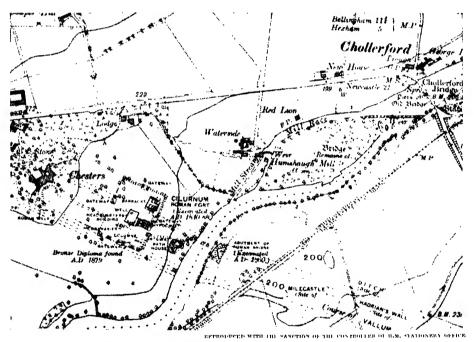
the map by its circular base line. A church or other building would be represented by its ground plan if the scale of the map were large enough. On maps most generally used the scale is too small for this, and so certain conventional signs are used and these will be considered later.

Map Scales

We have just referred to the scale of a map and this may be defined as the proportion of the distance between the representations of two objects on the Usually, the scale is indicated on the map and a line is marked off in equivalent distances. On the Ordnance Survey maps, with which we are chiefly concerned in this article, the scale is also indicated by what is known as the representative fraction or R.F. On a one inch to the mile map this would be given as 63.461, that is, one inch to one mile, there being 63,360 inches in one mile.

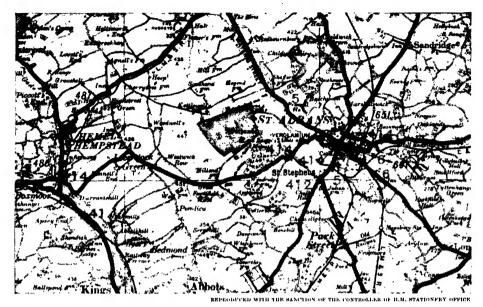
Six inches to the mile would be given as $\frac{1}{10.560}$, that is, $\frac{6}{93.360}$.

An advantage of this method of



Part of six-inch Ordnance map showing where the Roman Wall crosses the North Tyne. Note the wealth of detail, including buildings, ruins, sites and dates of important discoveries.

map to the actual distance between those objects on the ground. Thus, if two churches or other features one mile apart are shown on the map with an interval of one inch, then the scale is one inch to the mile. If the map distance were six inches we should have a scale of six inches to the mile, or if only half an inch that would be the scale, or, as it is more often expressed, two miles to the inch.



A portion of the Half-inch Ordnance Survey Ministry of Transport Road Map. This does not give contours, but the route numbers of all roads are shown.

centimetre on the map represents 100,000 centimetres on the ground or one kilometre. At the same time it conveys to the Englishman, accustomed as he is to feet and inches, that one inch on the map represents 100,000 inches or 1.58 miles.

Choice of Map

It is obviously possible to include many more details on a large scale map than on one of smaller scale. A square mile of ground would be represented on a six-inch map by thirty-six square inches, but only by one square inch on a one-inch map. Consequently, many features shown on the larger map have to be omitted from the smaller one. The choice of a map for any particular purpose will therefore be determined by the amount of information required.

A map of six inches to the mile will show in a rural area all the field divisions and represent the course of hedgerows, walls, etc. Almost every building will be indicated and the boundaries of parishes, rural districts, and so on, will be inserted. Such maps are invaluable for special work, as in tracing the line of an indistinct Roman road through a wood and across a series of fields, or in locating some not very obvious prehistoric feature on open downland. While a map of this scale is useful for close investigation of a small area, it is not a convenient size for touring, and even a walker might cross a dozen sheets of six-inch maps in a day's journey.

For walkers the most useful maps are those of the Ordnance Survey on the scale of one inch to the mile, and copies of these, covering every part of Britain, may be obtained through any bookseller. With the aid of these maps, excepting perhaps in the rugged Coolin Hills of Skye, you should be able to find your way through the wildest and most desolate regions to be found in this country.

Cyclists will probably prefer the map on the scale of two miles to the inch, for while these do not indicate footpaths, they do show all roads, lanes, villages, hamlets, and many other features. Maps of this scale will also serve the motorist for a day or week-end run, but on tour he may prefer a scale of four miles to the inch which, of course, includes a much greater area of ground in the same map space. In some regions, such as the Lake District, the Peak District and North Wales, cyclists and motorists would be well advised to carry the appropriate one-inch map, for no smaller scale can adequately represent all the numerous landmarks and viewpoints.

There are many motorists' maps published on such small scales as ten, fifteen or twenty miles to the inch. These have their uses for indicating relative positions of places, for rough planning of routes and calculation of mileage and for travel on the major roads. By exclusion of much detail and by omission of many villages and minor roads, they achieve an apparent simplification, but that deceptive clarity is only obtained by the sacrifice of much that is worthy of consideration.

This fact needs no claboration, but can be ascertained by any one who cares to check the omissions by comparing a map of, say, two miles to the inch with one of the same area on the scale of ten miles to the inch.

Maps on the scale of one inch to the mile are probably the most detailed we

Ministry of Transpor Other Motor Roads	rt'A'Roads
Minor Roads Bridle & Footpaths Unfenced Roads are shewn by dotted lines Stopes steeper than † ——— Toll Gates ————————————————————————————————————	
Kaibways. Double Line	Stations Gutting Sandament Station (closed) Sand Hills Rocks A Beaum
Church or Chapel with Ion	Post Office Paramore To Hay
Windmill & Windput Lighthouse A Lightshi Parks & Ornamental Ornamental	np Boundaries County

Fig. 2. The conventional signs or characters used on Ordnance Survey one-inch maps. Familiarity with these signs is necessary for efficiency in map reading.

are likely to use extensively, so we might consider what information can be gleaned from such a map, for any one accomplished in reading it will have no difficulty in making the most of other maps.

In Fig. 2 are reproduced the conventional signs or characteristics which are given in the margin of all Ordnance Survey one-inch maps. Familiarity with these signs is an essential in the art of map reading. It is not suggested you should sit down and memorize them, but until you are thoroughly acquainted with them you should consult the explanation given for every sign you find on the map.

It will be seen that certain structures such as churches, windmills, lighthouses, are represented by special signs. This is done because if the buildings were represented by their proportionate size on the map they would not be sufficiently distinct, and valuable space would be used in inserting the appropriate lettering such as "church," "windmill," and so on.

With the roads another convention is adopted and they are represented with exaggerated width. Thus, a road of fourteen feet or more in width will be indicated by a coloured line one-thirty-second of an inch broad, which, of course, represents that fraction of a mile, or one hundred and sixty-five feet.

When we know just what each sign indicates we can make the best use of the map in locating our position, or in deciding which way our route lies and learn in advance what to expect; as, for instance, whether we shall be on a footpath, an unfenced or fenced lane or road, whether we shall pass under or over a railway, whether there is a church with or without a spire at the next

village, and whether there is an inn and a railway station and whether it is possible to telegraph or telephone from the post office there.

The map itself is ruled into two-inch

squares which are a help in judging distances and also facilitate reference. These squares are numbered 1, 2, 3, and so on, from left to right, and lettered A, B, C, etc., from the top downwards. If, therefore, you wished to tell a friend how to reach a certain place, assuming he had the appropriate map, the easiest way is to give the reference letter and number of the map square. A section of a map is shown in Fig. 1 with the references at the sides.

Waingates Farm may thus be located by saying it is to be found in square 1311, half a mile west of the railway.

If you will trace the road on the map southwards from Boroughbridge, you will see at intervals of a mile the figures 1, 2, 3, representing the mileage from Boroughbridge. Along the road there are other figures in smaller type. Thus, beneath the Λ in Aldborough is the figure 64 and short of the end of the

second mile is the figure 170. These indicate the height at that point above what is known as mean sea-level. If you searched about at that place you would find cut in the stone of a wall or building a sign like this T which is known as a bench mark and which indicates the spot at which the surveyors took the level.

Obviously, it would be impossible to indicate on the map all the varying levels of the ground in this fashion. On some maps, particularly those of small scale, different heights are represented by differences in colouring. Land less than three hundred feet above sea-level may be represented by a shade of green.

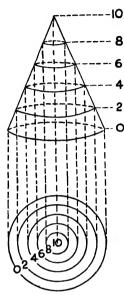


Fig. 3. A cone ringed at equal distances with circles representing contour lines. The concentric circles below show how these contours would be represented on a map.

Between that altitude and, say, seven hundred and fifty feet, a lighter green might be employed. Land from seven hundred and fifty feet upwards may be represented by shades of brown, deepening as the height increases.

This method gives a general impression of the ground relief, but cannot show the minor features of the country. A much more accurate method is by means of contour lines. If we look at a one-inch map we shall see a number of fine lines winding in and out all over the map. These are the contour lines and without proper understanding of their significance it is impossible to be proficient in map reading.

Contour Lines

Although contour lines are baffling things to many people, there is really nothing abstruse about them, and any one with a little effort can master the art of reading their story, and a very fascinating story it can be. Simply stated, a contour is a line drawn on the map through places of equal height above sea-level. Thus, if we pick out a contour on the map which somewhere along its length is marked with a figure, say 250, then we know that all the ground along that line is two hundred and fifty feet above sea-level.

A simple illustration of contours may be obtained by considering a cone. Suppose we take such a body with a vertical height of ten inches and stand it on a sheet of paper. If we draw a pencil round the bottom edge of the cone we shall produce a circle which is a plan or map of the cone. That circle represents the form and area of the base of the cone, but it gives no idea of height and might equally well represent a flat disk.

At vertical intervals of two inches we might mark the cone with circles as in Fig. 3. If we consider the lowest of these circles it is obvious that any point on that line is two inches above the base and any point on the line above is four inches above the base. We have, in fact, ringed the cone with a series of contour

lines at two-inch intervals. If we now look down on the cone vertically we shall see a series of circles which are shown in the plan, and the figures inserted in the plan indicate the vertical height of any point on that particular circle. Each contour line is, in fact, a plan of the cone at the height indicated.

Nature does not produce perfectly conical mountains, but in Fig. 4 are reproduced the contours of a hill which is a near approach to that shape and, as will be seen, some of these are roughly circular. But whatever the shape of the mountain, it is possible by contours to express the degree and extent of its slopes. To the practised map reader the contours will clearly indicate where the hillside falls steeply and where it flattens into a gentle incline, where the valley is narrow and where it widens.

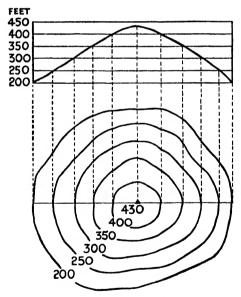


Fig. 4. The lower figure represents the contours of a roughly conical hill. From the horizontal line perpendiculars have been drawn from the points of intersection of the contours. In the upper figure these perpendiculars have been continued above the base line to the lines drawn to scale at distances corresponding to the contours. A line joining the tops of the perpendiculars then gives an outline of the hill.

From a contoured map it is possible to draw a section which will illustrate the varying levels of the ground along any particular line, and this has been done in Fig. 4.

First we choose a line for our section and draw a line of corresponding length Fig. 4 shows the method of constructing a section from the contours given.

The accomplished map reader, needless to say, does not find it necessary to take all this trouble to visualize the land as depicted by the contours. The way the lines are disposed, here equally and

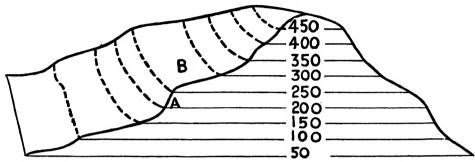


Fig. 5. A representation of a hill, part of which has been cut away to show a vertical face. On this face the contours, being equidistant, are shown as parallel lines. On the left the contours are shown on the ground. Where the slope is steep, as at A, the contours are closer together than at B where the gradient is lower.

on a sheet of paper. On this we insert the points of intersection of the contours and from those points erect perpendiculars to the heights given by the contours. This, of course, will have to be done to scale. On drawing a line joining the tops of these perpendiculars we shall reproduce the rise and fall of the ground along that line. In this case though, we have to take the scale of the map into consideration and also the vertical distance or interval between the On the one-inch map the contours are given at fifty feet intervals. Since one inch on the map represents 63,360 inches on the ground, then fifty feet or six hundred inches would be represented by 60.3 or roughly 105 of an inch.

Representation of Relief

This is too small a scale to work with, and we may increase both vertical and horizontal scales; or if scientific accuracy is not required, we may increase the vertical scale only, say five or ten times. It should then be remembered, though, that we have exaggerated the relief and not produced a true representation.

widely spaced, there converging and next running with little space between them, indicate to the practised eye just what to expect on the ground.

A few hints may be given as an aid to recognition of significant features and when these are fixed in the mind, proficiency in map reading becomes a matter of practice.

Fig. 5 represents a mountain with one side cut away to present a vertical face; an outline, in fact, which might be produced from the appropriate contours. The contours are carried across the vertical face as parallel lines, as they must be in such circumstances, since they are at equal intervals of fifty feet. On the left of the diagram the contours are seen running across the hillside, and there, owing to the slope of the ground, they are not parallel. When the fall of the ground is steep, as at A, it will be seen the contours are closer together. Where the gradient is lower, as at B, the contours are more widely spaced. This is the first rule to remember, that the closer the contours the steeper the slopes.

Where the contours are evenly spaced, then the slope will be uniform. Where

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the spaces between the contours become wider down the hillside, then the slope will be less steep below than above and will produce a concave outline. Where the contours are bunched together somewhere beneath the summit the slope will be convex.

Contours forming a V-shape, as at A in Fig. 6, might represent equally well a spur of a hill or a valley. This confusion is cleared, though, when we consult the numbers which will be found somewhere on the contour lines. If the heights given are greater on the inner lines, then they represent a hill. If the heights diminish towards the inner part of the V, then they indicate a valley. In the latter case it is also probable (except on chalk or limestone hills) that a stream would be shown flowing out of the open end of the V, thus suggesting a valley.

If you study a map in a piece of country with which you are familiar and compare the contours with the land forms they represent, you will acquire the capacity to visualize unknown ground from the map. Then you will enjoy in full measure the delights of map reading. In the words of the late C. E. Montague, "Convexities and concavities of ground, the bluff, the defile, the long mounting bulge of a grassy ridge, the snuggling hollow within a mountain shaped like a horseshoe—all come directly into your presence and offer you the spectacle of their high or low relief with a vivid sensuous sharpness."

A useful and often necessary adjunct of the map is the compass, and in many mountainous and moorland districts it would, in fact, be unwise to travel without both. Not infrequently people

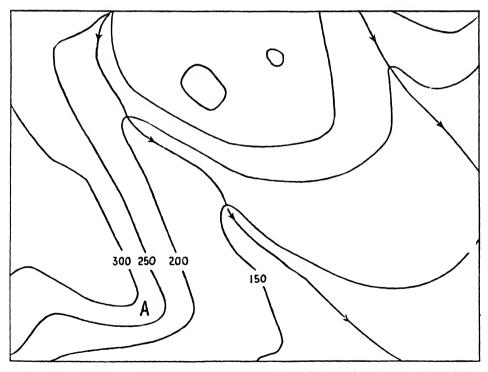


Fig. 6. The contours at A might represent a spur of a hill with descending slopes on the right, or they might represent a valley running in the opposite direction. In such instances the figures given on the contour lines are the clue to the correct interpretation. Here it will be seen is a hillside descending from above 300 feet to below 150 feet.

miss their way with unpleasant and sometimes fatal consequences through attempting to cross some of our desolate moorlands without map and compass. When overtaken in such places by mist or darkness it is only by careful use of those instruments that you can depend upon a safe journey.

The simplest form of compass consists of a magnetic needle swinging freely on a pivot and enclosed in a case with a glass cover. On the bottom of the case may be marked the cardinal points, and in addition there should be a circle divided into three hundred and sixty degrees. In other types the needle is mounted beneath a thin disk of card or other

material which is marked with the necessary graduations. This disk rotates or swings from side to side with the movement of the needle. In such a type there is often a vertical line marked on the inner wall of the compass case. This is known as the "lubber line." For practical work there should be two lines or notches on the outside of the case. one corresponding in position on the circle with the lubber line, and the other exactly opposite, so that a line joining the two notches would divide the circle accurately in halves. If these notches are not present you can, with a little care, add them yourself.

Compasses of the above kinds do not

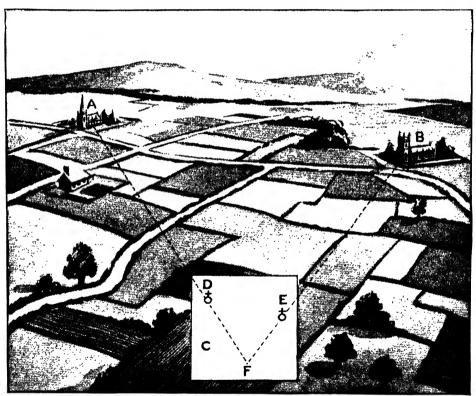


Fig. 7. In this picture the outline of a map C has been inserted. If we can locate ourselves as being at F, we draw lines from F to the representations of churches at D and E. The map is then turned until continuations of those lines would reach to the churches A and B and is afterwards set so that points on it are in corresponding positions to the features on the ground. By consulting the map in this position we might learn the names of the hills in the background.

allow a high degree of accuracy, but with care will give results satisfactory for the average wayfarer. For greater precision a prismatic compass is necessary. This consists of a graduated dial with the needle mounted underneath. The compass box has a hinged metal cover containing a circular glass window with a hair line across its diameter. When the hinged lid is vertical the hair line is in effect a continuation of the lubber line. Diametrically opposite the lubber line is a magnifying prism enclosed in a metal case with a sighting slot.

To take a reading with this instrument the compass is held so that the hair line is vertical. With his eye close to the sighting slot the observer turns the compass until the hair line, still kept vertical, is seen in line with the object of which the position is required. With the compass so adjusted the bearing is then read on the dial through the glass prism.

Magnetic North

When we use a compass, allowance has to be made for the fact that the needle always comes to rest pointing to what is known as magnetic north. In Britain this lies west of true north. On the right-hand margin of the Ordnance map are two arrows, as in Fig. 1. One of these represents the true north and the other the magnetic north. The angle between the two is termed the magnetic variation, and its magnitude is given for the year of publication of the map. As the angle varies from year to year the amount of increase or decrease is indicated with the qualifying words "not constant."

All this can be explained from the example in Fig. 1. The magnetic variation is shown as 14° 54′—that is fourteen degrees fifty-four minutes, there being sixty minutes in one degree. In the year 1924 the annual decrease is given as ten minutes, so in 1941 as near as we can calculate from this data the angle will be twelve degrees four minutes west of true north.

We can now use this information to

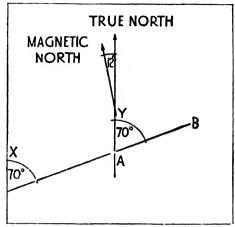


Fig. 8. The relative position of B to A on a map may be given in angular measurement as so many degrees from the true north. The line AB is prolonged to the vertical line of the map square and the angle measured with a protractor, for the angle X is equal to the angle Y. If the position of B from A were measured on the ground with the compass, the reading would be eighty-two degrees, from which would have to be deducted twelve degrees to allow for magnetic variation.

set the map, that is, to turn it so that the large arrow in the margin is pointing to true north. If our compass has a graduated base, we place it on the map so that the NS line coincides with the true north arrow. If the magnetic variation is, say, twelve degrees we then adjust the map until the compass needle comes to rest at twelve degrees west of true north, that is, at three hundred and forty-eight degrees on the graduated circle. If the dial is attached to the needle we set the compass so that the two notches previously mentioned are directly over the N S line on the map. In this type of compass the circle will be graduated from o at the north point in clockwise fashion. Consequently, we turn the map until, when the needle is at rest, the gradation of twelve degrees is opposite the lubber line. If this is done carefully, it will be found that the map is properly oriented.

When we have set the map we are able

to utilize it in several ways, for features on the ground will be depicted in corresponding positions on the map. In Fig. 7 the outline of a map has been inserted in the foreground of the landscape. We will suppose that we are standing in the picture at the point F. If we place a ruler or straight edge of paper with one end at F, and then turn it until the other end is pointing to the church in the distance, shown at A, on looking along the straight edge we should find on the map the symbol for a church at D, which will give us the name of the church. By using a straight edge in this

represented there and possibly learn its name. This procedure can be usefully applied on a hilltop or other good viewpoint. All around us may be other hills whose names we do not know, but if the map is set then we can apply our straight edge with one end on the position of the viewpoint on the map, and the other end pointing to a particular landmark. Somewhere along that line on the map we shall find the unknown feature indicated.

The map may be set without the compass in the following ways. We may not know our exact position on it, but we

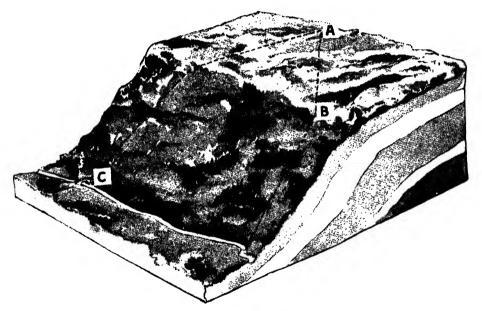


Fig. 9. A person on top of the hill at A would not be able to see the bridge C in the valley, and might walk to B and then descend, only to have to walk downstream to the bridge. By use of map and compass it would be possible to take a direct line to the bridge.

way we can produce sighting lines to various points on the map, and by directing our eyes along those lines, observe if the actual features are visible from our viewpoint.

Conversely, with the map set, we may turn our straight edge toward: some object visible on the ground, perh. is a prominent hill. Then if we follow the line along the map, we shall find the hill can see a straight length of road or railway, or the edge of a plantation which is represented on the map. If we turn the map, until the line on it representing the chosen feature coincides with the actual line on the ground, then the map is set. We can, to satisfy ourselves, check the operation by producing sighting lines on the map and seeing if they correspond with the features.

When our position on the map is known we look for some object on the ground which is marked on the map. A straight line is ruled from our position to the representation of the feature and the map is then turned until the line, if prolonged, would reach from our standpoint to the chosen object. In Fig. 7, if we know our position on the map to be at F, we can draw lines to the symbols of the churches on the map at D and E. If the map is then adjusted until the prolongation of these lines would reach to the churches on the ground at A and B, then the map is set.

Taking Bearings

It was mentioned above that the circle of the compass dial is graduated in three hundred and sixty degrees, and this enables us to express directions or bearings in angular measurement, the north point being taken as zero.

In Fig. 8, if we are standing at A and we wish to express the position of B by this method, we have to measure the angle made by a line joining AB with the line of true north.

On the map we measure these angles with a protractor, using for north and south lines the vertical lines of the squares with which the map is ruled. Actually, these are not true north, but they are near enough for our purpose. If we prolong the line AB until it intersects the side of the square, then the angle x is equal to the angle Y and measurement of x will give the bearing of B from A. If we took the bearing of B from A by the compass, the reading would be eighty-two degrees and from this we should have to deduct the twelve degrees for magnetic variation.

The point B might not be visible on the ground from A, but having ascertained its position from the map we are able to direct our course towards it by means of the compass.

We might, for instance, be on a wide expanse of moorland, with no conspicuous landmarks in view. The map may show that eastwards the hill descends to a valley occupied by a stream too wide to be easily forded. At one point only there is a bridge we must cross if we are to reach our destination before nightfall. Without making any calculations we might reach the valley at some considerable distance above or below the bridge and thus reach it by a roundabout route instead of by a direct line.

By taking the bearing of the bridge we can, with the aid of the compass, steer a reasonably direct course to the bridge and possibly halve the walking distance as shown in Fig. 9.

The bearing of the bridge from our standpoint we may find to be fifty-five degrees on the map, but to obtain this position with the compass we must add the magnetic variation of, say, twelve degrees, making the magnetic bearing sixty-seven degrees. If now we place the compass flat and allow the needle to come to rest, then the point on the dial corresponding to sixty-seven degrees will be our direction. A straight pencil or sheet of paper, placed so that it is directly over the pivot of the needle, and the required gradation on the dial will form a sighting line. On looking along that line we may note a slight dip, or perhaps a rise in the edge of the hill which is on the line or near it, and towards that we walk. When we reach that point we are able to look down on the valley and make for the bridge.

Walking in Mist

The compass may also be used to steer a course in mist, provided we can locate ourselves on the map to start with. If we don't know our position and cannot find it, then in such conditions even map and compass are of no avail. When there is any possibility of mist descending the wayfarer must walk with an eye on the weather and be mindful of his position and the direction in which he is travelling.

Once the surrounding landmarks are obliterated, it may not be possible to find any feature which is indicated on the map. Provided these precautions have been taken, we may with care follow a course in any desired direction.

Aware of our position, we find the bearing of our objective from the map, and then note the direction as given by the compass and walk as far as the most distant point discernible in that line. The compass is then consulted again and the process repeated. This, of course, is a slow method of progress, but is the only way one can be sure of maintaining the required direction.

In the Clouds

Two people may move in the following way. One stands with compass in hand while the other advances to the limit of vision, being directed to bear left or right as necessary. The one with the compass then joins the leader, who then moves off again as directed by the compass bearer.

When caught by mist on the hills, unless you are on familiar ground, it may be advisable to descend to lower altitudes which may bring you below the clouds. Sometimes a very short descent will be sufficient to effect this.

If the map shows a stream near at hand, that will provide an obvious line to the valley. When following such a course, it is advisable to keep a little to one side of the stream, lest it should suddenly descend into a narrow gorge with steep sides or plunge over a sheer crag. Where such a feature occurs, precipitous rocks may extend for some distance on either side of the stream, necessitating a detour and some care in finding a possible line of descent.

In any circumstances a good map and a reliable compass will prove friends in need, and any one who has thoroughly mastered the art of using them may travel safely and confidently. Make a habit of consulting your map whenever it is convenient. With it you can anticipate the journeyings you would like to make. Villages and hamlets with inviting names will attract you, and so will the rivers and streams which wind their way across the map. And always the map will remind you of pleasant days spent in exploring an ever-delightful countryside.



PREPARING FOR THE BAD WEATHER

These walkers on a hilltop, threatened by obscuring clouds, wisely consult their map.

FEATURES OF THE VILLAGE

by TOM STEPHENSON

→ HE beauty of English villages in general has been often sung, and some writers have not hesitated to particularize and laud this place or that as the prettiest of them all. Profitless as such discrimination may be, most of us are inclined to assert that our own favourite village has greater charm than any other. One may champion the mellow glory of a Cotswold village; it may be Chipping Campden or Castle Combe. Another will just as strongly advocate the claims of Kersey, in Suffolk, or a compact, quaintly huddled group of stone-built dwellings such as the Yorkshire village of Dent.

The purpose of this article is not to consider the rival merits of our villages, nor is it concerned so much with obvious beauty, but rather with indicating some of the many features which may be overlooked or not fully appreciated by the casual observer.

Although modern progress and development have by now reached out from the towns to many villages, yet much of interest still remains. If we care to look around

and pry into quiet corners we may yet find many curious survivals with tales to tell of bygone days. From such relies we may learn something of the forefathers of the hamlet, how they lived and worked; how they carned their daily bread and how they used their leisure; why the houses were built in such a fashion and how the village acquired its pattern.

First of all, the name of the vidage may convey some idea of its origin, by whom it was founded and why it arose in that particular place. Elucidation of place names, however, has many pitfalls for the unwary. In recent years the study of this subject has developed into a science instead of what was often romantic guesswork. Sometimes the meaning of a name can only be determined after consideration of its earliest forms of spelling in old documents. Two places with names having the same spelling

today, may have had very different origins. Thus we have Hendon, in Durham, which was formerly Hynden, meaning "valley of hinds," while Hendon, in Middlesex, is derived from Hendun, meaning "high dun or hill."

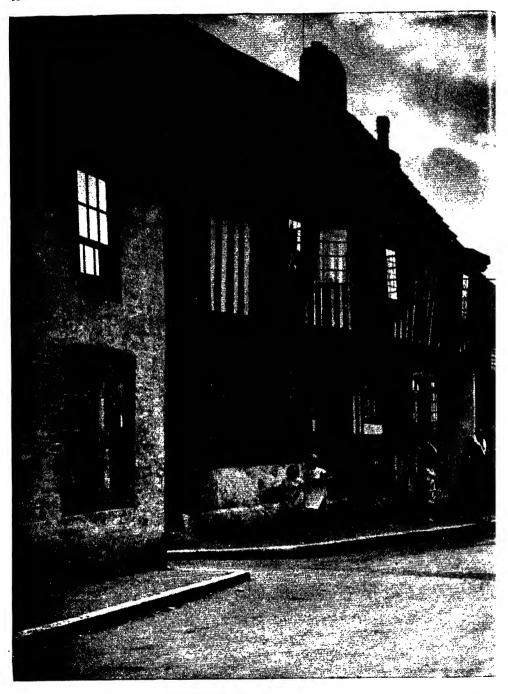
Nevertheless, there are many place names which are almost selfexplanatory and others containing elements the meaning of which is well known. Thus the word ford or bridge in a name refers to the former,



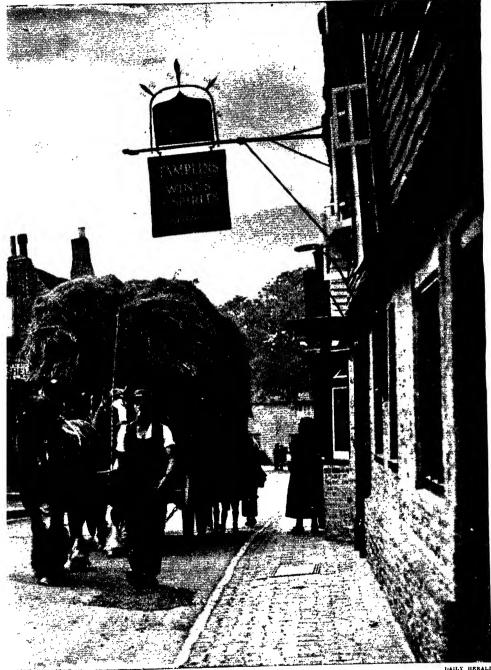
IN A BERKSHIRE VILLAGE

A brick and timber house in Steventon
with an attractive tiled roof.

if not present, existence of such a structure. Oxford was a ford for oxen. The numerous Bradfords were "broadfords," while the Stratfords and Stretfords refer to the crossing of a river by a "street" or road. Sometimes we may recognize



THE LAST LOAD



DAILY HERALD

part of a name, but the rest can only be ascertained by research. Bridgnorth means what it says, that is, the north bridge, and Boroughbridge refers to a bridge close to the borough or burg, that is, the nearby Aldborough, but the name Abridge gives little evidence of its ancient name of Aeffa's bridge.

The inclusion of "church" in a name refers to the one-time existence of such an edifice, and so do the words "kirk," "kirkby" and "kirby," all from the Scandinavian kirkia, meaning church. Newchurch needs no explanation, though the newness may, of course, have been applicable nearly a thousand years ago. Whitchurch is a shortening of Whitechurch and probably refers to a stone building in its pristine freshness. Ormskirk means Orm's Church.

The elements "ing," "ham," and "tun," which are common in place

names, date from Saxon times. "Ing" is from "ingas," a plural ending indicating a mar's sons, dependents or followers. So Fulking originally referred to the place or settlement of Folca's people. "Ham" meant homestead and Offham was thus Offa's home. "Tun" meant in the first place an enclosure or fence, but came to mean an enclosure round a homestead and eventually to indicate a village.

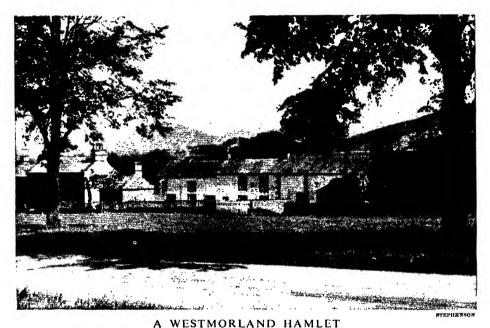
Sometimes we find two of these elements in one name, as in Waldingham, the "ham" of the people of the weald or wood. Waddington would similarly indicate the "tun" or village of Wada's people.

In some parts of England the place names are of Scandinavian origin and indicate the former occupation of those areas by Norwegians and Danes. The Scandinavian word for a village is "by,"



PIDDLETRENTHIDE

A corner of a curiously named Dorset village in the valley of the Piddle or Trent. Piddle originally meant marsh or low land. Piddletrenthide is explained as the marsh of thirty hides. Trente is the French for thirty, and a hide was as much land as could be tilled with a single plough in one year.



Dufton is an attractive open village with its houses strung along the village green. In the background is Cross Fell, the highest point of the Pennines.

and there are numerous names containing this element, as in Asgarby, Asgar's village; Ashby, village where ash trees grew; Gonerby, Gunward's village; Walby, near Carlisle, a village on the Roman wall.

Thorpe, another element which usually indicates Scandinavian influence, meant, in Danish, a hamlet or a daughter settlement from an older village. The word probably had this application in England for there are many instances where "thorpe" is preceded by the name of an adjacent village, as in Burnham and Burnham Thorpe.

Any one familiar with the Lake District will remember the numerous names ending in "thwaite," such as Braithwaite, Crosthwaite, Rosthwaite and Seathwaite. This element, which is also common in Lancashire and Yorkshire, is of Scandinavian origin and means a clearing or a meadow.

The few examples given above will perhaps indicate the possibilities of this subject, and the reader desiring to pursue it further should consult the county surveys which are published by the English Place Names Society, or the Concise Oxford Dictionary of English Place Names.

Before considering the individual features of any village, by studying its position we may often discover the how and the why of its having arisen on a particular site. In seeking such explanations we must, however, keep in mind the things the first settlers would consider the essentials of a desirable residence. Of primary importance would be a water supply from a stream or spring. In some parts of the country, owing to the arrangement of the strata, springs may occur along a line on the slope of a hillside and it will be found that villages have grown along that line.

We have to remember the newcomers would have to establish themselves as a self-supporting community, and would, therefore, require grassland for grazing and growing hay for winter fodder, land on which they could grow wheat or rye for their bread and barley for brewing. In addition, some woodland would be necessary to provide fuel, and timber for the building of their dwellings.

Where these facilities were found the home-makers chose a site on which to build, and in doing so were influenced by other practical considerations. If they settled close to a stream it would be at a point suitable for a ford or bridge and one not liable to be flooded. Often we find a village a little distant from the river and occupying a patch of gravel land a little higher than the valley floor. Again we may see a series of villages

along a hillside well out of reach of the flood level.

With such a series of hillside villages it often happens that the parish boundaries divide the land into a series of roughly parallel bands extending from the river to the top of the hill. The purpose of this was to ensure that each village had portions of the different types of land, the grassland and arable land in the valley bottoms and on the lower slopes, and the woodland or heath on the higher ground.

A well-known characteristic of the English countryside today is its division into small fields bounded by hedgerows, or in some districts by stone walls.



GODSHILL

The little church of Godshill, Isle of Wight, with its tower rising well above the thatched roofs, is believed to have been founded in the reign of Edward the Confessor, but was largely rebuilt in the fourteenth century.



ON THE VILLAGE GREEN

At Cavendish, in Suffolk, a lovely thatched village, horses are still turned out to graze on the village green, maintaining the old common rights of the villagers.

This, however is largely a development of comparatively recent times. In earlier days much of the land was cultivated under what is known as the open field system, a method which existed in Saxon times, continued until the last century, and still lingers in one or two villages today.

The Medieval Village

In a typical medieval village there would be a group of dwellings each with its toft or garden. There would be a larger house, possibly moated, occupied by the lord of the manor. The arable land of the village would be divided into three (in some places two and in others four) open fields.

In the three-field system each field was cultivated in turn in a fixed rotation. The first field would be sown in the autumn with wheat or rye for bread. Barley or oats for drink and fodder would be sown in the second field in the spring, while the third field would lie fallow. Each of the fields in turn would be autumn sown, spring sown, and fallow.

All the fields under cultivation, and also the meadow land, were divided into acre strips, an acre in those days being loosely defined as the amount of land which could be turned by an ox plough in one day. The word furlong also had a similar origin, for it is derived from furrow-long, the length the plough was taken without turning. A number of strips in arable and meadow land would be allocated to each farm, which would also have rights of pasture on the common land, and in the arable fields after the harvest. This system of cultivation still lingers as a relic of the past in a few places, notably at Laxton, in Nottinghamshire, but generally we shall only find odd clues of its former existence. Sometimes the names of the three fields still persist. Laxton has its West Field, Mill Field and South Field, and Oakley Reynes, in Bedfordshire, has its West Field, Road Field and Church Field.

Besides the arable and meadow land, there was the common land on which the villagers had rights of pasture and certain other privileges. They might, for instance, take timber for fuel and for repairing their dwellings, and also take turves from the heath and bracken for litter. The phrase "by hook or by crook" is said to come from the ancient common right to take such dead wood from the trees as could be reached with the implements mentioned.

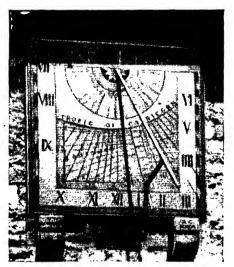
Most of the common land has been acquired by private owners, but there are said to be more than one and a half million acres of such land still remaining in England and Wales, and in some places the ancient rights are still maintained.

The late W. II. Hudson described an instance in Grovely Wood, in Wiltshire, where the inhabitants of two villages had the right to wood for burning, "cach person being entitled to take home as much wood as he or she can carry. The people of Wishford take green wood, but



AN OLD BENCH END

In many old churches the ends of the seats are ornamented with curious carvings. This one, at South Brent, Devon, depicts the hanging of a fox.



A SUNDIAL

DIX ON-SCOTT

Sundials preceded clocks on village churches. This fine example is to be seen at Eyam, Derbyshire.

those of Barford only dead; they having bartered their right at a remote period to cut growing trees for a yearly sum of five pounds, which the lord of the manor still pays to the village, and in addition the right to take dead wood."

Many villages still have fields known as Lammas Lands, so called because they were enclosed from Candlemas to Lammas; that is, from February 2 to August 1. These lands were under the supervision of the hayward, whose duty it was to see that the fences were not broken down and that the cattle did not get into the growing grass. Have was the old name for hedge, and so we might term him hedgewarden. Among his other duties, this officer had to impound straying animals, and lay complaint against their owners at the manor court. In some villages the old pound, or pinfold, still remains.

These manor courts or court leets also survived in many places until recent years. In the little Yorkshire village of Slaidburn, for instance, there is in the village inn an ancient barn-like room, with timbered roof and billowing floor,

which is still known as the court-room from the fact that the court leets were formerly held there.

Frequently, we shall find the site of the ancient home of the lords of the manor occupied by a building still known as the "manor house." The land cultivated by the lord of the manor was known as the "home farm," and though the manor house may have disappeared a home farm may still exist.

doves was a prerogative of the lord of the manor, and though the peasant resented hordes of these birds fattening themselves on his corn he had no redress. "Little wonder," says one historian, "that the dove house became one of the most hated landmarks of the lord's position and of the subjection of the villagers."

Another common feature of the village was the mill where the corn was ground.



THE NAVE OF AN ANCIENT CHURCH

Brixworth Church, Northamptonshire, is believed to date from the seventh century, and was built from bricks taken from Roman buildings. Note the Saxon windows in the wall at the west end of the nave.

Elsewhere the site may be located by traces of the moat or manorial fish ponds.

Another relic is the old dovecot. In medieval times large flocks of doves or pigeons were kept in such structures, for they were a prized delicacy, and during the winter months provided relief from the monotony of salted fish or meat. Picturesque as we may consider these dovecots, they were not so regarded by our village ancestors. The keeping of

Most of these were driven by water power, but windmills began to appear in the twelfth century. All were the monopoly of the lords of the manor and the villagers were liable to fines if they took their corn to be ground elsewhere. Today the name Millfield may be the only indication of the former presence of such a structure, but some villages still have old mills occupying the site of earlier buildings.



A SAXON CHANCEL ARCH AT BIBURY, GLOUCESTERSHIRE



A BEAUTIFUL ROOD SCREEN

W. F. TAYLOR

This richly carved screen is to be seen in the church at Plymtree, Devon. On the panels at the base of the screen are representations of the Three Wise Men come to worship the Infant Jesus. In pre-Reformation times there was a rood-loft above the screen.

The Lancashire village of Whalley still has an Abbey Mill. There the abbot of a Cistercian monastery in the village was lord of the manor. Whalley also illustrates the persistence of local names. Some land on the outskirts of the village is still known as "Lord's Park," from the fact that it was the deer park of the lord abbot. A field is still named "Canals" because of the fish breeding ponds of the monks which once existed there. Four centuries have passed since the monastery was dissolved, but the names persist. In the same village is "Clerk Hill," a name which takes us back to even earlier days for it refers to one Saxon Ughtred, the clerk. Conversation with local people will bring to light similar survivals in most villages.

Some of these names may have endured for a thousand years or more, and many tell of early settlers in the district. Thus, in the north of England such words as "laithe," a barn; "garth," an enclosure; "wath," a ford; "fell," a hill; "gill," a valley; and "keld," a spring, are all of Scandinavian origin and recall the coming of the Norsemen.

Threapland is another interesting name, for "threap" is still a word used in northern dialects, and means to argue or dispute. Threapland was then debatable land and frequently we shall find the name occurs near a parish or other boundary.

Many parishes have their "Poor Lands," probably indicating lands left to provide relief for the needy. In some places we find a "Butt Field" or an "Archer's Lane," references to the days when every village had to maintain its shooting butts. During the Middle Ages every one had to attend church in the morning on Sunday or pay a fine, and in the afternoon men had to practise archery at the butts and teach their sons

to shoot. To prevent the neglect of archery for more popular recreation, the government in the sixteenth century had to pass legislation forbidding all "unlawful games."

Gallows Field

There are countless other interesting names you may discover for yourself. Some, such as Gibbet Hill or Gallows Field, will tell their own grim story. Others, such as Starveacre, Starvecrow or Starve All Farms, are also self explanatory. Many other names, however, are not so easily interpreted, and their original meaning may only be known to one or two of the oldest inhabitants, or may have been completely forgotten. Even so, a little inquiry may be worth while, and, though your quest may fail, you will at least have had some interesting conversation, and probably have discovered other unsuspected facts and curious sidelights on days of long ago.

When we begin to look round a village it frequently happens that the parish

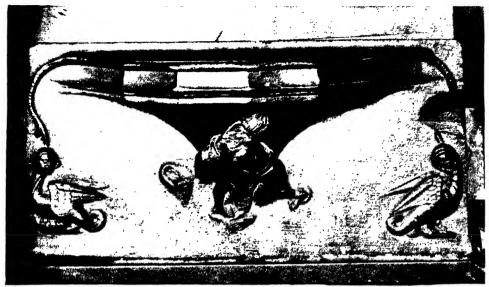
church is the first thing to attract our attention, for it is often the dominant feature of the place. We could not, in fact, choose a better starting point, for in bygone days the church was, besides being a place of worship, the social and business centre of the village. There the local government was conducted and it was the gathering place for meetings of all kinds. Courts of justice were held there, markets were set up in the churchyard and often in the church itself. Various festivals were celebrated there, plays were performed, and there are records of dancing round the maypole in church.

There are many ancient decrees providing evidence of these practices. Thus in 1268 a papal legate prohibited the setting up of stalls for merchandise in church, and there is record of public banqueting and drinking in church being torbidden at Exeter in 1358. Serjeants-at-law consulted their clients in the nave of the old St. Paul's Cathedral, and in the seventeenth century Yorkshire people danced in their churches at Christmas.



AN APSIDAL CHURCH

The little village church of Wing in Buckinghamshire has an apse of Saxon workmanship. The existing windows are obviously of later date. Beneath the apse there is a crypt.



MEDIEVAL CARVING

W. F. TAYLOR

The up-turned seat of a misercre, or misericord, at Nantwich, Cheshire, showing on the underside an early craftsman's conception of two wrestlers at play. On each side of this are representations of strange birds.

If we can recognize the various styles of architecture an old church will have added interest for us, but even though we cannot distinguish Norman from Early English, or Decorated from Perpendicular, there are yet many details which we can appreciate and which have a story to tell.

Possibly we shall enter a churchyard by a lych gate, the roof of which sheltered the priest when he met a funeral at the gate and read the opening of the burial service.

Defensive Towers

The tower or spire may next call for notice. A spire is purely decorative, but a tower may have been more utilitarian. In troublous times it would serve as a lookout, and some church towers appear to have been built for defensive purposes, as at Bedale in Yorkshire, and Salkeld in Cumberland. The Church of St. Nicholas, now the Cathedral at Newcastle upon Tyne, has a tower from which in old days a lantern shone to guide belated waylarers. At one time the mayor and

burgesses had control of the tower, and the bells were rung at their behest for various purposes, such as summoning the council and perhaps to give warning of siege by raiding Scots,

On the south wall of the church we may find a sundial, or the remains of one, for from Saxon times onwards it was usual to provide such a feature.

The porch by which we enter the church is often a large structure, for it was formerly of greater importance than it is today. Above it there may be a niche which before the times of iconoclastic Puritans was occupied by an image of the patron saint of the church.

Along the sides of the porch there will probably be stone benches, for here coroners' courts were formerly held and other business transacted. In some places the village school was held there, and John Evelyn, the seventeenth-century diarist, tells that he was taught the rudiments "at the church porch of Wotton," in Surrey.

Often within the porch there may be a stoup, or stone bowl, which in

pre-Reformation days would contain holy water. Inside the church, and probably near the door, will stand the font. In former days the christening water was kept in the font and was credited by the superstitious with magical properties. In the thirteenth century covers were added to fonts and kept locked, to prevent witches and other people stealing the water for evil practices. Scars indicating the former presence of hinges and hasps may be seen on fonts which were in existence prior to the Reformation.

The body, or nave, of the church will have seats or pews, but in earlier days there were no such provisions beyond stone benches along the walls or round the pillars. From this fact is said to come the saying, "The weakest go to the wall." In some old churches the



SEDILIA

Stone seats known as sedilia are usually found in the south wall of the chancel in old churches. This example is to be seen at Hawton, Nottinghamshire.

bench ends are elaborately carved thus providing examples of the skill and whimsical fancy of medieval craftsmen. In the seventeenth century began the fashion of erecting high-screened pews where the squire and his family might sit in secluded case during the service.

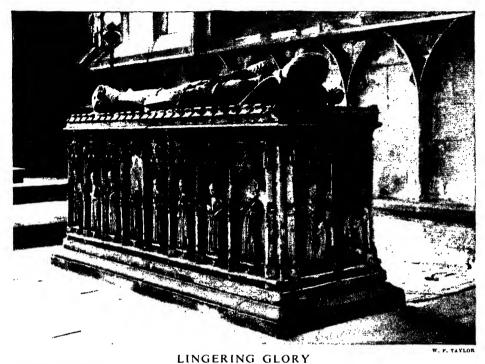
The nave runs lengthwise from the west end of the church to the entrance to the chancel, and on one or both sides of the nave there may be an aisle. These aisles may be of later date than the nave, and may have been added at different times. In such instances the north aisle will usually be the older of the two. Sometimes the eastern ends of the aisles are screened off to form chapels which may have contained altars in pre-Reformation days. Evidence of the former existence of an altar may be afforded by the presence of a piscina in the wall. A piscina is a hollow basin with a stone drain. In it the communion vessels were washed after the sacraments. During the thirteenth century double piscinas were sometimes built, the second being for the priest to wash his hands in before consecrating the elements.

East of the nave is a chancel, so called because it was shut off from the body of the church by the *cancelli*, or lattice work, of the screen which extended across the lower part of the chancel arch.

Medieval Pulpits

In front, that is on the west side of the chancel arch, stands the pulpit. Most likely, this will be of post-Reformation date for prior to that time a pulpit was not an essential church feature. Here and there may be seen beautifully carved pulpits, or we may come across an imposing three-decker pulpit complete with sounding board. Occasionally may be seen a curious survival in the shape of an hour glass, by the sands of which the parson timed his sermon.

The lectern, or reading desk, which formerly stood in the chancel, is now usually found west of the chancel arch. There are numerous surviving medieval lecterns, many of them beautifully



A striking fifteenth-century tomb at Norbury, Derbyshire. Carved in alabaster, it perpetuates the memory of a member of the Fitzherbert family.

wrought in brass or wood. Usually, the lectern is in the form of an eagle, said to be symbolical of St. John.

One of the chief features of the medieval church was the rood-screen separating the nave from the chancel. Above this screen was a narrow gallery known as the rood-loft, in which stood the rood or figure of Christ on the cross, with a representation of the Virgin Mary on one side and St. John on the other. Both screen and loft were richly ornamented with tracery and carving, but, unfortunately, after the Reformation they were regarded as emblems of idolatry and superstition, and the great majority of them were ruthlessly destroyed. A few ancient rood-lofts still remain, and a number of screens also escaped the iconoclasts.

Even where loft and screen have been removed, there may yet remain tell-tale marks on the masonry and perhaps a staircase and door in the wall by which the rood-loft was reached.

Many Saxon and Norman churches had a rectangular nave and a chancel with a semicircular or apsidal end in which the altar stood. This style of building did not persist, but there are a few remaining examples. One of the most famous is the church at Kilpeck, in Herefordshire, complete with nave, chancel, and semicircular sanctuary. Other excellent examples may be seen at Wing, Buckinghamsnire; Worth, Sussex; Newhaven, Sussex; and Fritton, Suffolk.

The altar in medieval churches always has been the principal feature and was usually built of stone and topped with a stone slab incised with five crosses, one in the centre and one in each corner. Like the rood-lofts, these altars were removed or destroyed at the Reformation and their places taken by communion

tables which stand behind the altar rails at the east end of the chancel.

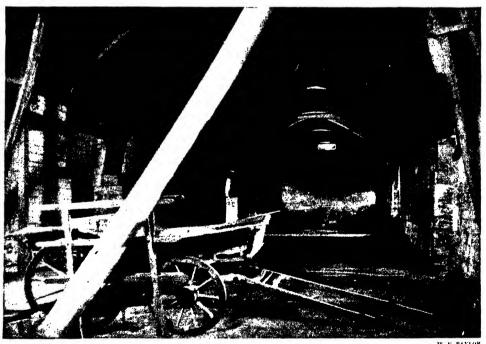
In the chancels of some churches, particularly those situated near or once connected with a monastery, there are beautifully carved wooden stalls known as misereres, or misericords. The seats of these are often hinged, the undersides having a bowed projection, sometimes richly ornamented with carvings of animals, birds, leaves, and various grotesque figures and illustrations of fables. Demons carrying off monks, a blacksmith shoeing a goose, the "Fox and the Grapes," and the "Seven Deadly Sins" are some of the subjects of these quaint carvings.

When it was necessary to stand for a considerable time during the service the seat could be tipped up and the underside would provide some support. While providing this slight concession to the weakness of the flesh the seats were also

something of a booby trap, for if the occupant of the stall happened to doze and allow the full weight of his body to rest on the upturned seat, it would fall to the horizontal position, much to the discomfiture of the slumberer.

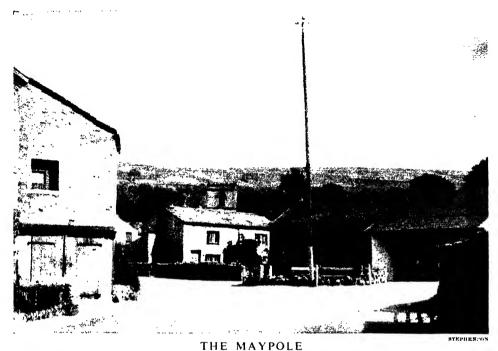
Near the altar on the north side there may be a recess known as an aumbry where the altar vessels could be secured. The south wall of the chancel will probably have a piscina, and west of it in the same wall may be stone seats known as sedilia. Frequently, there are three of these, sometimes with seats of different heights for priest, deacon and sub-deacon.

Also in the south wall of the chancel, but sometimes in the north wall, there may be what is known as a "low-side" window. Formerly such windows were unglazed, but could be closed with a shutter. In the past these apertures were known as "leper windows," it being



THE TITHE BARN

In days when each farm had to contribute a tenth of its produce to the Church, huge barns were required for storing the harvest. Here is an interior view of a tithe barn at Bradfordon-Avon, Wiltshire, whose fine roof is almost ecclesiastical.



Kettlewell, a Yorkshire village at the foot of Great Whernside, in Upper Wharfedale, still retains its maypole, as do several other villages in this dale,

believed that lepers came to such openings to see the celebration of the Mass. Lepers, however, were not allowed even to enter the churchyard. Other explanations have been advanced, but none is generally accepted.

In addition to the features of the church which have been mentioned, there are, of course, many other interesting things such as old almsboxes and parish chests, chained books yellow with age, and various types of memorials to the departed. These latter may range from simply inscribed tablets or ancient brasses to elaborate effigies. These are a study in themselves and provide many curious insights into the customs and the dress of bygone days.

Perhaps in the churchyard, or just outside, we may find a time-weathered stone cross, or the remains of one, possibly just a pedestal surmounted by the mutilated shaft. Some of these crosses are of religious origin and may be even older than the church itself,

marking the spot where services were held before the church was built. Other crosses served to indicate the site of the market cross and were known as "Cheaping" crosses from the Anglo-Saxon "cheap," to buy. This word, incidentally, persists in such places as Cheapside in London, Chippenham, and Chipping Sodbury.

The majority of these crosses were destroyed or badly damaged by the Puritans. Though there be no remaining vestige of the structure, it will frequently be found that the site is still spoken of as "The Cross by the village people.

Another architectural heritage with ecclesiastical associations is the tithe barn. Some of these are of great age and of magnificent proportions with buttressed walls and long roof, and church-like interior with nave and aisles and massive timbers. In these barns were stored the wheat and barley, the peas and beans and other crops

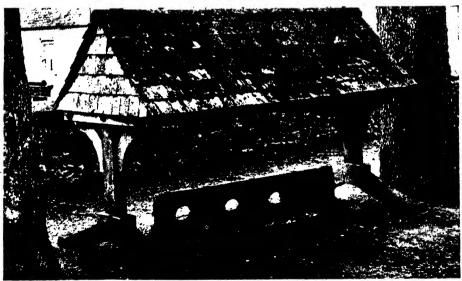


THE LOCK-UP

Some villages still retain their old lock-up, where the constable kept in custody any miscreants he arrested. This specimen, locally known as "The Cage." is preserved at Lingfield, Surrey. contributed to the Church as tithes from every farm in the parish.

Nothing is so symbolical of the traditional "Merrie England" as the maypole, for it at once conjures up visions of a happy contented people tripping lightly on the village green and gaily performing ancient rites, the origin of which had probably long been forgotten.

In the Middle Ages and in Tudor times May I was a public holiday. On that day men and women, young and old, rose before the dawn and went from the towns and villages to go "a-maying" in the woods. There they gathered the may and other blossoms and flowers with which they returned before sunrise to decorate the exteriors of the houses. The maypole was decked with streamers and flowers and drawn to the village green by a team of oxen, followed by the villagers all brightly dressed for the revels. The pole was erected on the green and the Queen of the May was crowned, and the rest of the day was spent in lighthearted frolic, in dances led by Robin Hood and Maid Marian, in



THE VILLAGE STOCKS

HUMPHREY AND VERA JOE

In hygone days every village was compelled by law to maintain its stocks for the punishment of offenders. The above are to be seen in the churchyard at Ottery St. Mary, Devon.



TEAPOT HALL

DEXON-SCOTE

This quaint cottage near Dalderby, Lincolnshire, is believed to represent the earliest style of architecture in rectangular houses. The framework consists of two trees forming an inverted V at each end and joined by a ridge beam.

morris dancing, shooting at the butts and other amusements.

Generally, the maypole was only erected for the day, but in some places it was a permanent fixture on the green, and here and there we may still find one rising high above the cottage roofs.

Village Stocks

Should we mistakenly assume that the England of those days was a land of plenty, a Utopian place of unalloyed happiness, we shall frequently find evidence to the contrary. At no great distance from the maypole may stand the remains of the village stocks, a mute reminder of the days when every parish had to maintain its stocks, whipping post, and ducking stool.

Each village had its constable, a man of many parts and a man with many duties to perform. By the oath he took at the court leet or at the quarter sessions, he had to prevent all manner of bloodshed, assault, affrays and outcrys, execute warrants and writs and carry out all the

other duties of his office. He had to disperse unlawful assemblies, arrest suspected persons and keep them in custody until trial; prevent swearing, tippling in ale-houses, and profanation of the Sabbath; see that every man provided himself with suitable weapons and that fathers taught their sons to use the bow. He had also to apprehend rogues and vagabonds found begging, and to keep a vigilant eye on minstrels, strolling players, pedlars and tinkers and other wanderers.

The constable had also to arrange the watch; that is, to appoint the villagers in turn to serve as atchmen. It was also his duty to see that no felon escaped. To prevent this, he was authorized to raise the "hue and cry," when all the villagers had to turn out on foot or on horseback and pursue the fugitive, shouting and blowing their horns so that the hue might pass from village to village.

As the constable was liable to heavy penalties if he let a prisoner escape,

arrested persons were usually placed in the stocks or the village lock-up until they could be taken before the magistrate or conveyed to jail.

Punishment of the offenders after they had been sentenced was also the constable's duty. This might mean locking the culprit in the village stocks or taking him or her to the nearest town to sit in the stocks there during market day. There are many old records of these punishments. Thus, a woman of Crakehall, in Yorkshire, was sentenced to be taken to Bedale, three miles away, and to sit in the stocks on market day with a paper on her head bearing in large letters, "I SITT HERE IN THE STOCKS

I SITT HERE IN THE STOCK FOR BEATINGE MY OWNE MOTHER."

In 1658 the court ordered Margery Watson, of Whitby, to be ducked by the constable unless within a month she asked forgiveness in Whitby Church and at the market cross.

Men and women convicted of petty larceny, and all rogues and wandering people without licence, were ordered to be whipped by the constable. For unfortunate people classed as rogues and vagabonds, there were more severe penalties. A statute of 1572 ordered that such persons were to be grievously whipped and burnt through the gristle of the right ear. Rogues found to have been previously branded might be sent to jail from which the only escape was by hanging or by transportation.

So far we have said nothing about the villagers' homes, and it is time we glanced at the various types of houses we are likely to meet. At the outset it should be mentioned we shall not discover any of the cottages—or, rather, the hovels—of our Saxon forefathers. These were built of timber and have long since vanished.

The Romans, of course, used stone for their buildings, and so did the Saxons for some of their churches; but except



BLACK-AND-WHITE BUILDING

Pitchford Hall, Shropshire, provides an excellent illustration of the length to which ornamentation was carried in the style of building known as half timber or black-and-white work.

STEPHEN"O



WHERWELL

A pretty Hampshire village in the valley of the Test with many quaint, neatly-thatched whitewashed brick and timber cottages.

for an occasional stone-built house of a wealthy citizen, wood was used for dwelling houses on through the Middle Ages.

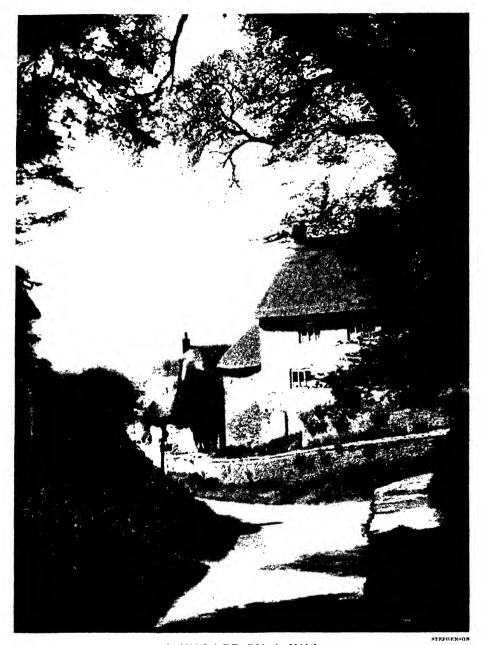
Although none of these early houses have endured, their pattern persisted into comparatively recent times, making it possible for us to trace the evolution of cottage architecture. The photograph of the quaint house known as Teapot Hall illustrates what is believed to be the earliest type of rectangular dwelling.

To build a house like this, two pairs of trees were taken from the forest and after being roughly trimmed were erected to form two inverted V's or crude Gothic arches, and these were joined together at the top by a beam or ridge tree. The two arches would form the gable ends of the house, and the word gable is, in fact, derived from the Anglo-Saxon gaflas, which was the name given to these arches or forks. On this simple structural basis the side and end walls were added, various materials such as

wattle-work covered with clay, planks or thatch being used for the purpose.

The distance between the two arches was about sixteen feet and was known as a bay, and houses were described as being of one, two, or more bays. Mr. S. O. Addy, in his fascinating book The Evolution of the English Ilouse, states that the length of the bay was determined by the amount of room required for two pairs of standing oxen. "As the 'shippon' or ox-house frequently was, together with the barn, under the same roof as, and in a line with, the dwelling house, the practice arose of making all the bays, whether of the 'shippon,' the barn or the dwelling house, of uniform length."

Across the arches of the forks—or crucks, as they are termed—a tie beam was attached to give added strength. Eventually, these beams were lengthened to the width of the base of the arch and a wall of timber, and in later periods of brick or stone, was carried up from the



A VILLAGE ON A HILL

An outcrop of limestone extending from the Dorset coast through the Cotswolds and across Oxfordshire and Northamptonshire, and through Rutland into Lincolnshire, has provided building material for some of our most beautiful villages. Aynho, seen above, is a pretty Northamptonshire village where the houses are all built of local stone.



A DALE VILLAGE

STEPHENSON

Thwaite, in Upper Swaledale, is a typical village of the dales, its houses, roofs included, being solidly built of native stone.

ground to the beam. Rafters from the top of this wall to the ridge beam were added and so was produced the normal gable end as we know it, with vertical walls and sloping roof. Occasionally, we shall find this cruck structure in old barns, and in a cottage at Haughton, Staffordshire, may be seen a pair of crucks in the gable surrounded by much more recent brickwork.

Throughout the Middle Ages the homes of rich and poor alike can have been but cheerless places according to our notions of comfort. Before the sixteenth century glass was too expensive to be used for windows except by the very wealthy. The word "window" today immediately suggests glass, but the original meaning of the word was "wind hole" or "wind eye." With smoke from the fire hanging round the room before escaping through a vent in the roof which served as chimney, and with cold air pouring in through the wind-holes, we can readily gauge what

little comfort there could have been. Timber continued to be the principal building material, stone only being resorted to in early days in districts where trees were scarce. Even the so-called half-timbered buildings are really timber structures with the spaces between the woodwork filled with other materials such as wattle and daub, plaster, stone or brick. We shall find all varieties of these in our travels.

In the eastern counties, where clay was available for brickmaking, we shall tind brick and timber, or houses entirely of brick, often with pleasantly designed chimneys. South-eastern England also provides a rich variety where we may find timbered buildings with fillings of local sandstone or of flints from the chalk, or of plaster. Bricks, varying in colour from place to place, provide other warm-toned buildings, and again we may find delightful combinations of brick with tiled roofs and tile-hung walls.

Across the Midlands from the Forest

of Arden to the Welsh border and northwards to Cheshire and Lancashire will be found the most ornate development of half-timbered buildings, with every gradation from the black-and-white work of simple cottages to the splendour of elaborately built mansions.

On the chalk lands of Berkshire, Hampshire, and Wiltshire we shall again find houses of brick and timber, usually whitewashed, and having roofs of thatch rippling over the upper windows.

In Devon many of the old houses have walls of cob built up in layers of a mixture of mud and straw. Each layer was beaten down and allowed to set before the next was built upon it, and so those two-feet-thick walls were raised and roofed with thatch and subsequently plastered with successive coats of tinted limewash. The granite of Cornwall provided yet another medium, and you may see the houses built of boulders and weathered stones undressed by any mason, and presenting a rugged aspect in keeping with the landscape.

Nowhere in England is there such a wealth of harmonious building as along what is known as the "stone belt," the

country traversed by the Jurassic limestone from Dorset to the Cotswolds and across Oxfordshire and Northamptonshire into Lincolnshire. The Cotswolds are renowned for many lovely villages built of that local stone which gave such scope to the mason, and added glory to his craftsmanship by mellowing through the centuries into such warm pleasing tones.

Villages of Stone

Finally, we turn to the northern counties and there again discover how well our forefathers wrought with the materials at hand. In Derbyshire dales, in some of Lancashire's unspoiled villages, in the dales and on the moors of Yorkshire and away up to Cumberland and Northumberland, you will see many a village of notable beauty where the houses from doorstep to chimney top are built of the same stone, and seem to have grown from the hillside rather than to have been imposed upon it.

So in your travels you will discover there is scarcely a village in England without some measure of beauty or a tale to tell of days that have been.



ESSEX CHARM

Finchingfield is a deligatful Essex village pleasingly arranged around its green, and with its square-built church tower on top of the hill.



THE PARISH PUMP

DIXON-SCOTT

Water laid on is a comparatively modern luxury. In earlier days water for domestic use had to be carried from the nearest stream, spring or well, as it still has to be in many places.

Here is the village pump at Walsingham, Norfolk.



A PACK-HORSE BRIDGE

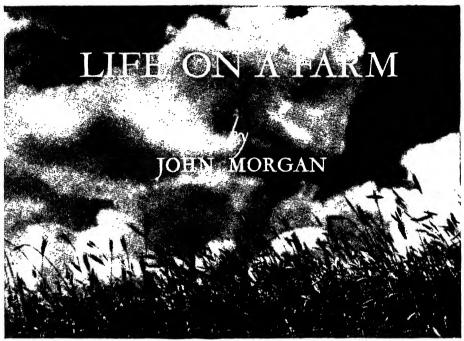
STEPHENSON

The Yorkshire village of Stokesley still possesses an ancient bridge, built for pack-horses and never meant for wheeled traffic. Possibly it is the "Stoxley-beck Bridge" which the parishioners were ordered to repair in 1648.



PASTORAL STUDY

A Hampshire shepherd, seventy-five years of age, and still busy in lambing time.



DORIEN LEIGH

PRING finds the farmer setting out on yet another year's round of farmyard and outdoor duties, filled with high hopes. No matter how disappointing and tiresome the previous winter may have been, a whiff of warmer airs from the south and he succumbs to the lure of the life, just as if he were a beginner again. The hedgerows are now budding, the grass and the young corn grows, the bleat of the lambs and the song of the birds can be heard. The rural scene changes rapidly.

Soon the cows will be out on the graze, "couples" will be running by the side of the ewes, and young corn showing up promisingly all over the dark acres of the arable fields. All this fires his imagination; he sees jobs beckoning to be done, in every direction. Then the stacks of last season's hay will be running short by the end of February. The farmer has kept a bit of the best to the end, for cattle in the yards and the cows in the stalls become as finicky over their food as children. He must

tempt their appetites so that, when turning out time does come along, they will go out in a condition which gives them a flying start on the young, luscious grass. Or perhaps his store of roots, swedes or mangolds is also about done, and the straw for bedding down the animals, so long kept inside most of the day, as well as the night, has to be eked out. He avoids buying as long as possible. Besides the "cake" bills alone are already heavier than he cares to think about.

But a warm, dry March comes, growth stirs in the fields, at first perceptible only to the ski"ed eye, and then obvious even to the uninitiated passer-by. The grass takes on that inviting shade of emerald green which has given the meadows of Britain fame the world over. That growth changes everything. The winter is over and the year's new round begins.

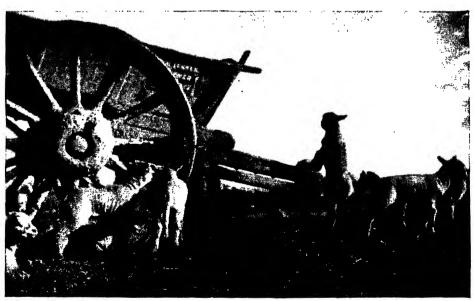
So, as soon as the arable land is fit to work again, heavy harrows drag down the furrows set up on edge by the autumn ploughs. Frost, wind and rain will have weathered them. The upper crust falls down into a rich tilth into which will now be sown oats or barley. The spring corn in, the cultivators make a preliminary canter over whatever acres have been left over for potatoes or roots.

"Turning-out Time"

And as the nights hold mild, as well as the days, the cows will lie out all the while. This brings the cowman's respite. Months of feeding and cleaning a large herd, watering and washing down, stodging across yards soaked in the winter's rains and manure wastes, has been a toilsome business. "Turningout time" is the high moment of the year for him. Maybe, at last, he will get a Sunday off to celebrate. But the cowman, or stockman as some call him, has been no ordinary attendant. More than one night in the recent months has been spent doctoring sick animals or making matters comfortable for the newly born calf and its mother. And there is a rare skill in feeding properly. Fattening a bullock is not just a question of filling the crib with food. nutritive virtues of balanced rations is more often applied in the modern cowstall than in the human dietary.

Even the farmhouse larders are empty-The farmer's hospitable roof has entertained many callers in the duller, shorter days and longer evenings. Somehow a farmhouse gate holds out a invitation. What country perpetual carries such substantial or attractive farm dwelling-places as Britain does? Red-roofed or stone-tiled, gabled, clustering in trees, windows peeping out of thick walls more than a century old, so many of our farmhouses wear a warm charm. A depleted pile of logs, cords of wood the rustic calls them, somewhere within easy reach of the back door, intimate the cosiness of open fireplaces usually to be found within. Even the bare branches of all too often neglected orchards make one think of bottled fruit and jams. And still in use, though not as frequently as they once were, will be the hooks in the pantry from which the hams hang.

Whether or not farming pays remains



A SUSSEX NURSERY

Lambs love to gambol and romp in the sun, and a fine day puts them in a playful mood.



A SUTHERLAND FARM

V. F. TAYLOR

A typical tidy stacked yard reminiscent of a fortress. When winter storms have to be faced in the far north the farmer likes his stacks near at hand.

a perpetual argument. The queer thing is that if all that is said on this account is only half true, farms should be had merely for the asking. However, that is not often the case. A farm is no sooner available than someone else is just as soon at hand to take it over again. The land may only be half used, the hedges wear a wild neglect, but still the occupier manages to live -a personage of some character very often, and a man apparently getting more out of life than his equal in the towns. "Mother Earth" continues to lay her devotees by the heels. Those who have once entered her service find it a hard matter to leave it. is no sameness about any day in a farm year. There is variety about every task, skill in every stroke of the tool. Each day as it comes demands some slight but inevitable adjustment to environment of soil, sky, hedgerow, or some attention to a creature's habits or demands.

Let us suppose our farming year is to

be spent on a mixed farm. We shall find such farms in almost any corner of rural Britain, for most good farmers work by an instinct which cautions them to avoid putting all their eggs in the same basket. There are specialist farmers, of course, but where there is success in such cases it is almost certain to be due to the man's special aptitude for the line he follows. Caution is a mark of the true farmer, sometimes mistaken for mere conservatism. He mixes his risks of disaster as well as his chances of success or runs of good luck.

So by a mixed farm is meant one which is made up of both ploughland and grassland. And in livestock there will be several kinds or breeds such as cattle, pigs, certainly poultry, and sometimes sheep. On the ploughland, or arable as it is more usually called, there will be a variety of crops grown in a rough-and-ready kind of rotation, so that the same crop is not grown on the same piece of land year after year. As a rule, it benefits the land not to have the

same crop grown on it more than once in every four or five years.

The farmer may grow some wheat, partly because its straw is the best for bedding down the animals in the yard, or for thatching his stacks. But it will also be because he gets a guaranteed price from the Government for the better or "millable" part of this crop, whilst the "tail" or "unmillable" remainder comes in as cheap food for the egg-laying hens.

Crops and Soils

The other crops a farmer grows on his arable acres will depend a good deal on what kind of soil he is favoured with. He may grow a few acres of sugar beet if he lives in the eastern counties, for much the same reason as wheat is grown, viz., that the price is fixed and sure under contract with a local factory. There may be oats for the horses, or marrow stem kale as a bit of winter green feed for the cows, or as a standby for the sheep.

No country in the world possesses so

many varieties of soil in so limited an area as Britain. They range from the heavy clays of Essex to the easy-working loams of the Lothians in Scotland, down to the blowing sands of West Norfolk. Some parts are flat, as in Lincolnshire, or undulating country like Northants, the kind of country favoured by hunting folk. Or the lie of the land may be a mixture of green hills and flat marsh lands, such as one finds in cow-keeping Somerset.

Again, rainfall plays a very vital part in the use made of our farming lands. Draw an imaginary line from Southampton up to Edinburgh, and the eastern half can be regarded as dry on the average, with only about twenty-five inches of rainfall a year. So it comes about that it is over that area where the bulk of the arable land is to be found. More than three-quarters of our cereals, sugar beet and roots, are grown in this part of the country. For one thing, a dry time is more certain for corn harvesting time—a most important consideration. To have one's harvest ruined by



SHEEP SHEARING

A scene at Knowle Farm, Broadchalke, Wiltshire, where mechanical clips are used. A neighbouring shepherd lends a hand.



BLOSSOM IN KENT

DAILY HERALD

Cherry, pear and plum blossom seen from the tower of Newington Church, in the heart of the fruit country. Note the oasts, which will be used later in the year for drying hops.

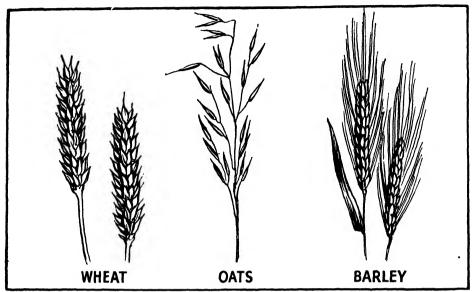
wet is to lose a lot of the value of the whole year's work and expectations, perhaps even the whole.

In such areas as Norfolk and Suffolk it is difficult to grow useful grasses. The grass lands soon parch up in a summer's drought, yet the same drought will be suiting the wheat, whose roots go ever deeper as day follows day without rain. Grass flourishes in a wetter atmosphere, so it is in the western half of the country, with its average rainfall of thirty-three to thirty-seven inches a year, that the best of our grazing farms are to be found. For this reason the west country is naturally favourable as a cattle and dairy farming area.

Other aspects of climate are just as important when it comes to "cropping" the land. Places near the sea get less frost than districts inland, so the coast

of Ayrshire is a safer spot for "early" potatoes than Bedfordshire, very much more south. That is partly why a county like sea-girt Kent is so suitable for the culture of fruit. A thing worth keeping in mind about frost, too, is that crops on a gentle slope often escape its ravages during the nights when those in the valleys below get badly nipped. That is because the cold air naturally flows downhill just as water flows to its lowest level.

So if one farms in Norfolk, there is a natural tendency to cultivate sun-loving crops such as wheat, beet or barley, though barley comes to its best if there are cool nights as well. Bullocks instead of cows will be favoured, because they will eat up coarse fodder such as straw and sugar beet pulp and yet make better manure or yard dung, so essential for



A sketch illustrating three common crops on arable land.

keeping up the fertility of such light or hungry soils. So it comes about that because turkeys, certainly in the early stages, prefer a dry spring to a wet one, they do well in Norfolk. Sheep also prefer the drier to the wetter climates. They can stand as much cold, without wet, as any farm animal, and they are popular in Scotland. In fact, the sheep population of Britain, contrary to the human tendency in this regard, continues to drift northwards year by year.

Very often the mixed farm is a family farm as well. That is to say that much of the work is done by the farmer and members of his family with only a paid man or two to help out. This is more true of the farms in the western part of the country. Arable farms usually employ more labour than grass farms. They use more machinery, often tractors instead of horses nowadays. They need at least one man and a team of horses, or their mechanical equivalent, to every twenty-five or thirty acres under the plough.

Much the largest part of the farmer's income comes from producing milk and rearing young cattle as a by-product

from keeping cows. The dairy farmer earns as much money from milk as from the sales of all the fat cattle, sheep and pigs put together. Even poultry bring in nearly three times as much revenue to the farmer as comes from the sale of wheat, barley or oats. Potatoes, too, bring in more cash than the growing of corn does, when prices are reasonable, though potatoes have the reputation of being rather a "gamble crop." In the same season the prices may range from £2 a ton up to £12 a ton.

Cheese and Dairy Farming

Not all cows are good for milking. Some breeds are much better for large yields of milk than others, and so long as farmers are paid only for quantity and not for quality, this is an important practical consideration. If a farmer finds that his best market for milk is a local cheese factory, then there is no better breed for this purpose than the black and white Friesian, originally imported from Holland where cheesemaking is still an important part of farming. The Friesian cow is large-framed and handsome with black and white

markings. In every dairy breed there are cows and cows, as the farmer says. It is important to have a good cow to build up the most profitable herd. Usually a good cow of any breed has a sensitive temperament, is light in the leg, bone and skin, with square hind parts and wedge-shaped across the chest, though with plenty of heart room. The good dairy cow usually looks as if she would make a good mother.

Friesian cows can give large supplies of milk, though many individuals may be a trifle deficient in butter-fat content. Milk distributors like to see a deeper cream line and more colour, so that often in a Friesian herd will be found a few cows of the Guernsey breed for toning up the cream quality and colour of the bulked supply. The Guernsey cow produces tinted milk almost as rich looking as its own golden or orange coat. Americans call it the "goldenbutter" breed. Actually the milk is not as rich in butter-fat as the Guernsey's

other Channel Island neighbour, the Jersey—a smaller, more pug-nosed and less hardy producer of the richest milk given by cows. But the Guernsey yields a larger amount over the milking life than the Jersey, and has the reputation of being more docile and hardier in constitution.

The Jersey is not regarded as a commercially profitable animal to keep by the workaday farmer, except as a butter maker, or for a special highergrade direct milk trade. That is why the lersey is more often found on the private estates of wealthy people than in the stalls of the family farm. Some say that the Jersey needs to wear a coat in cold or wet weather. That is certainly done in New Zealand where buttermaking Jerseys are by far the most general of the dairy breeds. In any case neither the Jersey nor the Guernsey are popular with the butcher as their flesh is tinted and so not sought after by the housewife.



HAYMAKING IN SURREY

The hay brought in by the horses is lifted on to the stack by a mechanical elevator.



A STURDY PLOUGHMAN



DAILY HERALD

D HIS STALWART TEAM

Probably the best all-round cattle for a mixed farm still are the Shorthorns. There are two types of Shorthorn—one which tends to run to a beef type and the other to dairying. But even the dairying type makes good beef so that the calves sell well or, if the bulls are reared after castration at an early age, they will grow into useful steers for fattening in two years or so. "Store" cattle they are called, "store" being the condition before the final stages are reached, whether it is a steer for fattening or a heifer to be put to the bull in due course and, after calving down, to be joined up to the milking herd.

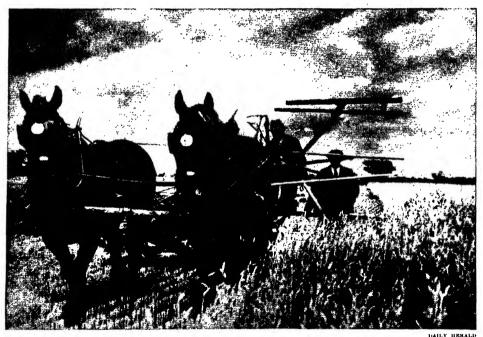
There are beef cattle which find their way on to mixed farms, such as the white-faced Herefords, especially in the vicinity of the county of that name. Most Hereford cows give just about enough milk to bring up a calf or two and that's all. But this breed has helped to found the herds of many of the great beef-cattle

ranches in South America and elsewhere.

So to the polled, or hornless, all-black Aberdeen-Angus breed. This compact, docile breed has come to the fore in these days of small joints and small ovens. The Aberdeen-Angus is quick maturing and small boned, and so meets the butcher's requirements nowadays.

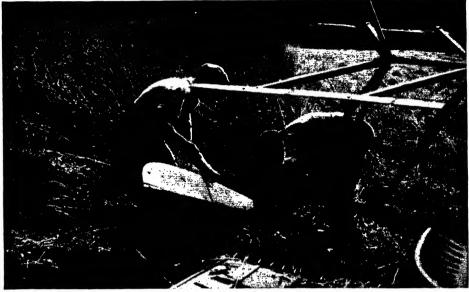
But Scotland also boasts of a dairy breed which some say will become preeminent throughout Britain in days not far ahead, viz., the Ayrshire. Timorous but very hardy, the Ayrshire breed is steadily building up a health record of which those who are concerned about the nutritional effect of milk take great account.

The Ayrshire is a handsome creature looking every inch a cow, except that she carries a set of horns upstanding as a reindeer's. The milk yields are consistently high, with a butter-fat content usually well above the legal minimum of three per cent or so. In short, it is



HARVEST-TIME

Essex is a county of heavy soils which are suitable for wheat growing. A scene on a farm at West Thurrock.



FIELD REPAIRS

W. F. TAYLOR

When the corn has been flattened by wind and heavy rain, the knife of the reaper and binder often gets jammed, and repairs have to be done on the spot.

a dairy cow with a great future, and one that takes to the milking machine on farms where labour is difficult to get, if care is taken to acclimatize the heifer coming into the herd for the first time.

The family farmer in Devon will cling to the county's own particular types of cattle—the Guernsey-like dairying Devons in the south and the red beefmaking type in the north. And in mountainous Wales there is a hardy, horned, all-black, slow-maturing bullock still preferred because it can get its living from hillsides where other cattle would starve. Much the same is true of that grandest-looking of all cattle—the shaggy fawn and russet Highlander—contentedly picking a scanty livelihood off the weather-beaten Grampian Hills in Seotland.

What a variety of cattle there is for the farmer to choose from! And even that is by no means the whole of the story because, as a rule, on the mixed farms you will find that many of the cows in the herd are what are called crossbreds. Some Shorthorns may have a trace of

Guernsey in them, deliberately infused by a breeder wishing to influence the quality of his milk. The favourite cow in many a herd will be called a "brindle," of no definable breed and with every evidence of a mongrel ancestry. A lot of this crossbreeding comes about because the man who has only a small farm and a few cows cannot afford to keep a bull of his own, so must use his neighbour's, which, as likely as not, will be of quite another breed.

Bacon and Pork

On most mixed farms there will be some pigs—though this is by no means the case on all. There are farmers with decided opinions about running cows and pigs on the same place. But there will almost certainly be pigs on the farm where butter is made, because the separated milk, after the cream has been taken off for the churning, makes such a cheap and nutritive supplementary to the pigs' food trough.

Pigs are wanted for two main purposes in this country, viz., bacon and pork.

Unfortunately, the pig of the right type for pork is not the right type for bacon. Yet sometimes, usually according to the time of year, the price per pound for pork pigs may be better than the price per pound for bacon pigs, or vice versa. This tempts farmers to try to make the best of two worlds by mixing the breeds, not always successfully.

Many people shop on the theory that it is not suitable to buy pork unless there is an "r" in the month. Seeing that there is no "r" in the month from May until the end of August, this means that the pork trade is usually dull during the hot summer months—as one might expect. Fortunately, holiday makers like to eat plenty of bacon and eggs, so the other class of pig becomes popular round about July and August.

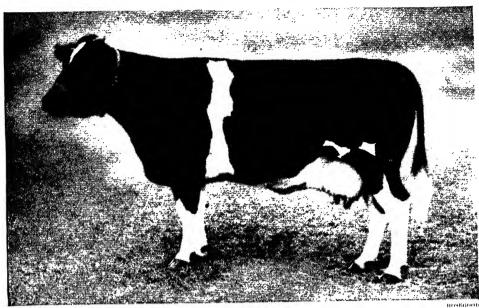
Marketing one's farm produce is beset with considerations like this. The farmer has many adjustments of the kind to make throughout the year. Very often potatoes sell badly before Christmas and better afterwards. Probably it is for the reason that people with allotments and kitchen-gardens grow enough potatoes for a few months which they use up first. Then the time comes when they must buy, and the potato trade looks up for the farmer who produces for sale, not merely for his own use.

The old-fashioned farmer mostly regards the pig as a profitable sideline when it can be kept from the more or less waste products of the farm itself, such as separated milk, second-class barley or small potatoes. The modern pig keeper, however, with his big herds of breeding sows, prefers to feed a pig as scientifically as the modern dairy farmer feeds a cow. This kind of farmer buys his pig meal by the ton from the merchants, sometimes already mixed and requiring only water to be added to the daily ration.



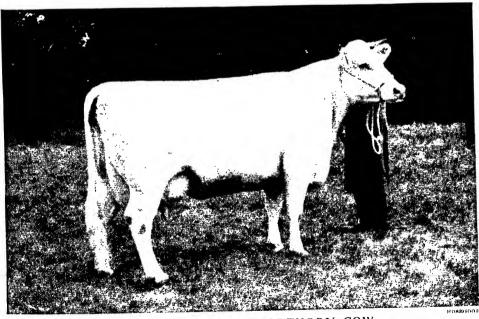
A WILTSHIRE THATCHER

A job which must be well done in exposed parts of the country. Paid by the square yard, the thatcher moves round from farm to farm.



A BRITISH FRIESIAN COW

A type of cow that fills the milk pail. A good specimen of this breed will yield its own weight in milk every fortnight.



A TYPICAL DAIRY SHORTHORN COW

Shorthorns are generally considered the best cows for the mixed farms, for even dairy cows of this breed provide good beef.

If a farmer thinks that taking one year with another, it pays him best to aim at producing pigs suitable for bacon, then, more and more, he turns to the Yorkshire Large White breed. Here he has to guard against thick, heavy shoulders, and should try to maintain plenty of length in the animal for a good side of bacon.

Other bacon types of pigs are secured by crossing a Large White sire with the prolific Large Black sow, or the similar breeder. There is one breed about which a lot is heard these days called the Essex, or Saddleback, because of a white band across the shoulders of an otherwise black pig. The Essex, or Saddleback, has a reputation for prolificacy and does well, making meat out of the minimum of trough food.

Looking after farm animals can be a very satisfying job for the person with the right sort of temperament. Cows have to be kept clean, not only by



A JERSEY COW

HOSEGOOD

Queen of butter makers and popular on that account as far away as New Zealand.

Welsh or Cumberland White variety. Large Black sows make good mothers and are of that placid disposition which helps the youngsters along. But the black skin is frowned upon by the bacon curers.

The pork types come from what are known as Middle Whites, snub-nosed, early doers found almost everywhere. Then there is the snub-nosed, black-coated, curly-tailed Berkshire, not so popular as once was the case, though a warm favourite still with the pedigree

clearing out the mess in their stalls, but by combing them down, trimming their tails and attending to their minor ailments. All this is essential as part of the curriculum for wholesome milk. A good man enjoys doing it.

The pig is a clean animal naturally, nearly always keeping a corner of the sty as a bedroom or boudoir, if only the farmer will encourage its good habits by providing plenty of straw and room enough for the animal to do her rousing about comfortably.



A CHAMPION AYRSHIRE COW
This breed has a very healthy record and a good reputation for milking well.

But too many farm buildings were constructed without thought of saving labour or without adequate provision for the essential light and air. Yards mostly are not roofed over, so that throughout the winter months when the rainwater is dripping off the eaves of the adjoining sheds, because of a general lack of guttering, mud and muck-saturated litter make getting about a tiring business.

Frozen Ponds

Very few of our farms are equipped with a satisfactory water supply. It would make such a difference if every cow had a water bowl at her head in the stall. There would be no more frozen ponds to break in winter time, and with a tap in the right place, washing down would be almost a pleasure.

The moment when joy rises in the stockman's heart comes with "turning out time" in the spring. For some weeks the cattle will have been restless in the stalls because they can smell the

young grass growing in the meadows outside. They merely pick over the hay for the tastiest morsels and in one way and another make it plain that they want to kick their heels outside in the sunshine. So, somewhere during the month of April, out they go. That is a great moment in the life on a farm.

Horses still hold their place surprisingly well in the daily round of farm duties. Very few farms of over fifty acres in extent are without a horse or two, in spite of the spread of machinery. There are at least 25,000 tractors at work in the agricultural districts, with most of them to be found in the arable areas.

The majestic Shire reigns supreme among horses for land work. A pair of these great-hearted creatures have a staying power and a pull which keeps the ploughshare turning the dark, wet furrows over hour by hour with almost a monotonous consistency of output. Tractors may do the work more quickly, and get it done in that short break between spells of unfavourable weather

which may be the farmer's only opportunity in a season. But tractors can be untidy tools, leaving headlands and corners that only a team of horses can cover up, following the tractor's work.

Controversy rages in the Shire stable over the question of "feathery" legs. The typical Shire that the breeders delight in, carries a wealth of hair or feather above the hoof. But it may be a different story when you talk to the horseman or stableman. After a long day working over stiff, wet clays, the feather is most likely clogged with soil and a man anxious to be done with a hard, long day's work in the field, is excusably tempted to scamp the job of combing out the tangled heels. But slackness here brings serious troubles-grease and what not. Legs and shoulders are the working parts of a farmhorse's anatomy and need most looking after. So a less feathery type is being bred to accommodate the needs of young horsemen anxious to be off to the Saturday's football match or for less work on Sundays.

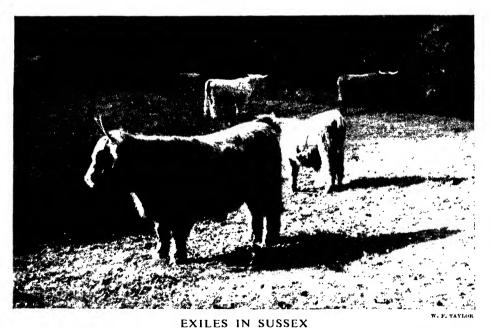
But, to the classic breeder, feather is strength and so the controversy rages.

East Anglia boasts a chestnut breed—the Suffolk of the arching mane. As a puller between the shafts the Suffolk has no equal, with the possible exception of the continental Percheron, favoured by brewers' drays and railway vans when horses were more frequently seen on the streets than is the case today.

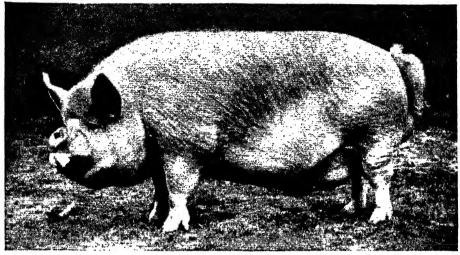
A Willing Horse

Scotland's favourite is the lighterboned Clydesdale, with more speed about its work than the massive Shire. Clydesdales have a good neck for the collar and get down to their job, though a trifle long in the leg in most English farmers' estimation. But there is no waste in the make-up of a Clydesdale's constitution. It is all work and willingness and that is what you look for in a working horse.

There is very little road work for horses in either town or even country nowadays. The motor lorry picks up



Highland cattle at Steyning. These shaggy beasts, monarchs of the cattle kingdom, belie their wild looks, and are really most docile creatures.



A CHAMPION BOAR

HOSEGOOD

Pig-keeping is either money or mud, the farmers say. Some pigs are kept for pork, others are bred for bacon. The Middle White, a fine specimen of which is seen above, is a fuvourite with the farmer intent on pork producing.

the milk at the gate, delivers the feeding stuffs or the groceries, right into the farmyard. Even the eggs, like the bullocks, are picked up in specially constructed motor vans. There is hardly a horse to be seen in cattle markets nowadays. It is all car park and cattle trucks on those busy weekly occasions.

Looking after sheep is a much more outside affair. Sheep cannot be accommodated about the farm buildings. For one thing, one of their main purposes is to be utilized as walking manure carts concentrating on fertilizing fields distant from the cattle yards, or too hilly to be reached by the dung cart.

Sheep take a lot of skilful looking after at times, with "lambing down" the high moment in the breeding flock's year. A field is chosen in the driest spot available, consistent with a combination of both sun and shelter. But it cannot be a permanent encampment or last year's troubles, if any, might be repeated. Unlike the cow-keeper, the shepherd wants doubles or twins. A ewe in good milk can do with one suckling on either side. There is a teat for each and no more. The shepherd's is a secretive

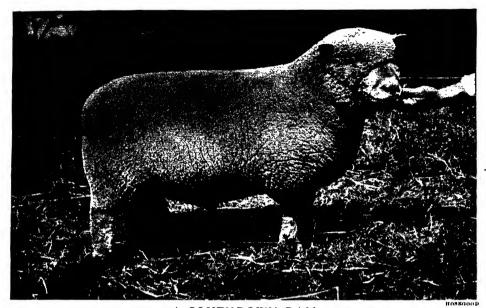
art, and a man without a liking for the flock is better without sheep.

Some breeds lamb down earlier in the season than others, though a good deal depends on the climatic conditions of the part of the country they thrive in. The horned Dorset Downs are the earliest and most prolific. They breed the Easter lamb which they "drop" as early as Christmas. Sometimes as many as three lambings in two years are accomplished by the Dorset horns without a weakening in the creature's constitution. For a farmer to fall for the temptation of two lambings a year is to ask for trouble if tried too often.

Hardy Sheep

But moorlands and mountain tops require a sheep of tougher, thriftier characteristics. Of these there are several breeds, such as the Dartmoor, Exmoor, Black Welsh Mountain and that favourite for crossing purposes, the white-faced Cheviot, each named after the native haunts providing heights for night rest and valleys for morning grazings.

Fleeces may be to some men the main desirability. Perhaps a weight of wool is



A SOUTHDOWN RAM

Centuries of judgment of Sussex flock-masters have evolved this fine specimen of the popular Southdown breed.

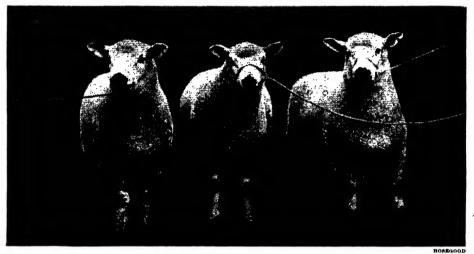


A LONK RAM
A hardy type of sheep which thrives on northern moors.

wanted which is not always the same thing as wanting quality, so they try out the fading curly-coated Lincolnshire or the Masham breeds.

Sweet mutton and small bones maintain the Southdown's reputation. Nipping the tops off young shoots of cocksfoot and clover makes for a contented disposition, though a sheep has a stubborn side if attempts are made to upset routine.

The arable man wants clean legs to keep the barrel of the creature well away from the stickiness of wet clays and Another high spot in the year's round of the flockmaster is, of course, the clipping time. Skill with the hand shears is fading out as the mechanical clippers come in, a tool with much the same action as a barber's neck clips. Some men like to clip soon after the sheep have had a washing, but that often depends upon whether or not the wool merchant will pay that little extra for a clean or washed fleece. Many of the older hands, however, prefer to clip a dirty fleece, because with the grease



EWE LAMBS

A prize pen of three Kerry Hill lambs, a breed popular on the Welsh borders.

puddles. This puts the black-faced Suffolk or the Oxford Down in favour. Then comes the butcher's choice—the Border Leicester—a Scottish cross with a Midland breed. Here's the sheep which makes the mutton.

Other sheep thrive in the marshes, such as the Kents or Romneys, well scattered by this time over the earth's surface and found as foundation stock as far away as the Antipodes. Some sheep are better as grass grazers. Others thrive on turnips and beet-tops. A farmer buying a flock has to keep well in mind the purpose for which he wants it and the class of land over which it is to roam, or be hurdled.

rising, the wool comes off all the better.

If lambing has been early and the lambs are well grown by May or June, as they may be in the south, then shearing-time is when the shepherd takes the opportunity of separating mother and offspring. Others leave at until dipping time, that moment in the year when the blowfly is troublesome and the law requires an arsenical dip in a deep bath to be administered.

There are many blood-sucking, fleshpuncturing insects that would otherwise flourish in the warm, wet cosiness found under the sheep's wool. And in the wilder districts, lambs are left with their parents until the autumn round-ups and



A FARMYARD SCENE

DAILY HERALD

A tractor coming in after ring rolling autumn wheat, and a three-horse ploughing team returning from the day's work at Brent Pelham, Hertfordshire.

sales, when men buy to make up their flocks, or draft out the ewes that are toothless and are past their prime.

Then follows mating-up time in the carly autumn. Much depends on a well-chosen tup, or ram, and the shepherd's management of his services. Here is where some of the breeder's money is made or lost. Often, where crossing is wanted, the tup is of a different breed to the flock of ewes he has been selected to mate with.

The shepherd and his dog is a sight for the hillsides, but, unless the dog is well trained for work in the flock, a man is better without one.

Poultry Farming

Poultry are found more often than sheep on the mixed farm nowadays. Time was, when the barnyard fowl was the housewife's perquisite. The eggs she took to market, or the trussed poultry, were either destined to provide funds for personal a fornment or some household embellishment.

Things have become cifferent nowadays

with regard to poultry. Flocks of a thousand birds are a common feature in the landscape.

Poultry troubles have been widespread with the increase of the intensive system. There is a swing back to a compromise with nature—both in hatching out and in rearing. The flock on the mixed farm is increasingly regarded as more likely to provide the conditions for health and profits, because there is both space and the surplus of corn stacks readily available.

Not all the mixed farm's income is, of course, derived from livestock, though much of the crops grown "walk off the farm," as the farmer puts it. By this he means that the hay from the meadows goes out in the milk churn, and the swedes from the ploughed fields are converted into livestock fat. And when the barley is turned down by the maltster then perhaps the best use that can be made of it is to feed it to the pigs.

Haytime and harvest are the summer's chief occupations for the farmer. Half the implements on the farm lie idle

until the whirr of the mowing machine reminds us that busy days lie ahead.

First comes the cutting of the clovers towards the end of May or the beginning of June in the forward districts. And if erratic April has not once more belied her tradition for showers, then the grass goes down from the middle of June.

Haymaking

Along come the tedders and rakes, the swathe turners, the sweeps and the elevator. Sometimes haymaking is one long chase between sun and shower. It certainly is so if the job is deferred until July. Haymaking, which drags out until August has started ripening the oats, is a tedious business, because haymaking runs into corn harvesting, and the two jobs clash. But there is fun in the hayfield yet. It is a grand ride home on the last load, and a stackyard that is filled with the sweet smells of sun-dried fescues and clovers is an augury of plenty for the stalls in winter.

And where the corn grows, harvest

month is the festival of the year. Λ reaper cuts round the ripening barley, the binder follows and the sheaves are thrown out handy. Then the stooking, and a week or so of waiting for sun and wind to dry out and bleach both stalk and ear. Wet may hold the process up, but do less harm than when the crop is hay unless, of course, wet turns to a deluge. Then a whole year's livelihood is wiped out. Old hands cast their minds back and make comparisons. But somehow or other always comes along the harvest home. Yields are guessed at, and mugs of beer drunk in celebration.

So life on a farm goes on. Men pitting their wits against weather, soils, breeds, new ideas. More men take to farming on their own; fewer men are ready to work on another's land. Some say they make money at it, most just a livelihood, but not many of them would change the life for a life in town. It is the man who works for wages who gets the least satisfaction out of it, even if the farmer gets most of the worries.



MARKET DAY

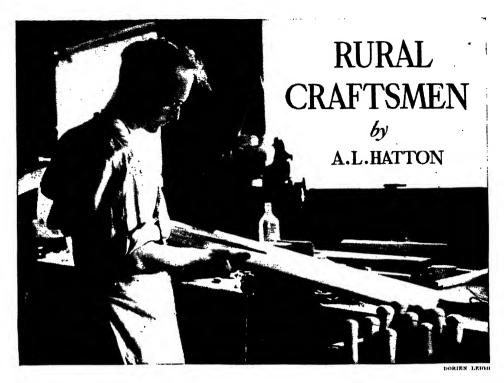
DIXON-SCOT

This picture, taken at Thame, Oxon, is typical of market day in a country town, when farmers from the surrounding countryside gather to buy and sell. Such scenes, however, may soon be things of the past, for attempts are being made to abolish the street markets.



DIXON-SCOTI

A SON OF THE SOIL



F you take the first turning to the right and the second to the left down Lany country lane you will probably find the forgotten England-the rural England that has watched the mechanical majesty of the arterial road sweep past with all the calm of a sitting cat. You may find a village or a farm, or perhaps only a clog-maker's encampment, but nobody there would be really dismayed if all the wheels in creation stopped revolving. Most of us would have to live in abysmal darkness if the electric lights went out for ever; and not only would we be baffled by the machine that turns heat into light, but also would not even know how to set about producing oil to supply primitive lamps. Many of us, now accustomed to electric light, could not even trim the wick of an oil lamp efficiently. Just think of the things we could not have unless there were others to make them for us.

Yet in stray fragments of forgotten England there are still craftsmen to whom the elements of living are as simple as they are to any frontiersman. There is nothing essential to their art of living that they would have to go without if mass production ceased tomorrow. They could feed themselves, clothe themselves, build their own houses and do the hundred and one jobs that were once the lot of pastoral men. And as time has no hands for them, they would even pause to add the finishing, beautifying touches to their work that speak of the craftsman's pride.

To them belongs all that is good in the tradition of the English countryside; they have plodded through the centuries with the same measured gait that still takes them over ploughed fields, rain or fine. They know how little man has changed the face of England, except where it is scarred by towns. They enjoy the same view as their ancestors, and it is likely that their grandchildren will see the same unchanged sweep of hill and dale. And they will quietly

remark, sardonic philosophers that they are at heart, on the persistence with which those members of their families, who have gone early to the towns to escape the dull monotonous round of the farm worker's week, come hastening back to the village of their fathers whenever they get the chance. Even to the young countryman, a day in town is no joy; he is glad to get back, though he may grumble about such things as make his lot more difficult than need be.

Craftsmen of the Lanes

All this does not go unnoticed among the craftsmen of the lanes. We should be proud of their ability to work by themselves in this changing, mechanically minded world; and we should ask their co-operation in introducing methods whereby a little of their stability and genuineness can be used to give a permanence to our lives. For in their commonsense way they take what is good from the new methods, just as they and their fathers kept what was good from the old. We must not forget that to them the land is more than a mere

taskmaster; it is part of them; they live to the rhythm of its seasons, prepared to endure much for a little profit. They follow in the ways of a long line of grey ghosts, hardy pioneers who have been battling with great odds for centuries. It is from them that the countrymen of today-the dairyman, the shepherd, the ploughman, the cowman, the thatcher, the hurdle maker and their fellows--have developed a shrewd-Even though they now handle machinery with the skilled fingers of mechanics, they still have the knack of handling animals, of reading weather signs, and of going about their craftsmen's tasks with that wise quietness that keeps you aware of their sound business instinct in not owning how good a time they have had since they were set down on earth.

If you talk to them, however, about the need for rural preservation, they remain unmoved. They remind you how little the centuries have changed their work, how even tractors can become part of the landscape and the radio a feature of the farm without much



AN ESSEX CRAFTSMAN

Cutting sticks to be used in thatching the barn roof. These the thatcher will use to bind his work and perhaps to weave a fancy pattern along the ridge.



A DEVON THATCHER

A thatcher at work roofing a cottage near Coryton. Note the pile of straw on the right which gives an idea of the amount of material required for a good roof.

altering the life of the countryside. You may complain that rural England has lost much of its charm through recent changes in farming, in transport and architecture; they will merely ask you to remember, in their queer, persuasive way, how wonderfully nature deals with the most difficult scar on her fair beauty. They leave us to regret the passing of the picturesque, for they often know too well its disadvantages. them rural charm will always linger only in meadow and on tangled moor. But they will tell of the rural craftsmen of whom they are all justly proud. Their ranks have been thinned, often to the verge of extinction, but their persistence seems to be just another of those things that weather anything, even the coming of the machine.

Farm people still turn to the craftsman when in doubt. He is asked for advice because he always knows the answer; not a smart, easy-to-come-by reply, but C.C.—D

a well-thought, considered opinion raised from a deep well of experience. These men hear in their travels those titbits of gossip that are so titillating to country cars, and like cobblers they have a reputation to preserve for always having a provocative theory to propound. They and their crafts are as essential to the life of England as the land worker himself. And they are just as tough; they even flourish amid encircling towns. would be absurd to weep over their disappearance. The ruthless old laws of supply and demand are bound to govern these things, and merely to bolster an unnecessary demand is to court extinction.

The fact that they exist, sometimes even flourish, despite encroaching mass production, shows that we need not worry about their fate. It is, however, a grand reminder of man's hand-to-hand tussle with natural things to see these fine old craftsmen at their work. Their

philosophy and their stories are as full of savour as any old shellback's. They are in themselves a mass of natural laws. They go back to the basic edicts that must eventually govern all art for their inspiration. And there is many a romantic story to be found in the log book of their crafts.

To enter a copse where you know there is alder wood, and to hear the clip-clop of the clog maker's axe, to know there will be a tattered tent, fire-tasting tea, and a twilight talk when the birds have quietened, is to realize another of the joys of being out of doors away from the smoke pall. The hurdle maker in his wood, the bowl maker in his shed, the besom man away on the moor or in his shelter behind the cottage; the thatcher on his ladder, pausing in his remarks to measure a sweep of his knife after the manner of an artist with his poised brush, and the old lace maker seated at her cottage door. her steel spectacles and fine-etched wrinkles making her the dream study of

an old master, they all find an excitement in their work that is hard to come by in these days.

The small boat builder, his feet rustling the shavings, working alone in his shed, breathing a scented atmosphere that belongs only to the home of boats, making a vessel of great beauty from its keel to the last lick of varnish, finds a sharp pleasure in his work—the actual joy of creation. To make a boat, thatch a roof, to do anything from start to finish with your hands, is to live again through a triumph that we, whose work has been bedevilled by changes or circumstances, can rarely know.

Still, a wish to return to archaic handwork would in its entirety be childish; our lot is mass production and machinery. There is no going back unless we want to flirt with disaster more bravely than we have faced the bombers. that does not make bodily labour a work that should be shunned, for as you will see when you meet the real craftsmen of this land, there is much nobility to be



WOODMEN AT WORK

Business overrides sentiment and the noblest monarch of the forest may in its turn be brought low to provide timber for the carpenter. Here the woodmen have almost sawn through the base of a tree, and soon its topmost branches will come crashing to the ground.



This primitive but ingenious appliance is still widely used. From the foot treadle a leather thong is passed round the spindle of the lathe and up to the end of a pliant pole overhead, which serves as a spring. The operator provides a downward motion with the treadle, and this is followed by an upward pull by the pole. In this manner the spindle is rotated, first in one direction and then in the other.

gained by striving with your body as well as your mind.

For a fortnight now the early morning stillness of the village, usually troubled only by an occasional cottager plodding heavily to work, has been shattered completely by the arrival of an antique motor car, held together by dignity rather than by mechanical ingenuity. Out of it tumble a noble trio: father, son and 'prentice hand, come to thatch the roof of a cottage that has risen like a phænix from a waste of masonry and old timber. It is to them, as they work, that we turn for information about reed. ling, rush, bavin or turf, all of them used in various parts of these islands to cover roofs and defy not only the more tempestuous moods of weather, but also the heat.

For a thatch keeps a room warm in the cold weather, cool in the heat, and also acts as a damper for noise. In fact, there are so many good things to be said

of a thatch that it is surprising, despite expense and danger of fire, that there are not more of them to be seen these days. Even so, the few remaining craftsmen capable of turning an old, bedraggled, weather-beaten roof into a smooth slope of golden thatch, are always in demand. Such is the perversity of fate that thins out a profession and then creates a demand with which veterans have difficulty in coping. There was a time when the thatcher could demand round straw, hand reaped for his purpose, for threshing and mowing machines break the straw.

Methods of thatching, especially in the matter of decorating and finishing off, differ according to local tradition and custom; so do the names of the tools. But in all cases, according to our old Hertfordshire thatcher, his face a network of wrinkles, his wide-brimmed grey hat throwing a shadow that could not hide the dazzling blue of his eyes,



IN A BUCKINGHAMSHIRE VILLAGE

The beech woods of the Chilterns have long provided material for woodworkers, and the making of chairs and other furniture is an old-established industry. Here is a woodworker at work in the little village of Turville,

even though they were behind steelrimmed glasses, a veteran will ask for unbruised reed or flail threshed straw.

Reed thatching may be of Norfolk, Suffolk or Kent reed, Norfolk reed being "terribly strong, lasting probably fifty year ner more." When he cannot get the straw he likes, he explained, he usually selects a good sound sheaf containing straws of even length, and, seizing it by the butt, beats it across a barrel to shake out the grain. After a combing to rid it of small and broken straws, it is carried in bundles to the roof. Working from eaves to ridge, the thatcher places the "yelms" of straw up the roof, starting from the right. Soon the bare wooden slats, laid to take the straw, are covered by a woolly headdress, great bushy eyebrows growing over the dormer windows. Shaking out the straw, the thatcher lays it carefully at a slant, pegging down the spars laid across it. With his bat he beats it upwards in the direction in which it is laid, driving it firmly under the spars until the roof is covered evenly. The next layer covers the spars—and so he goes on, one layer overlapping the other after the manner of tiles until the smooth surface reaches the ridge, which is eventually finished with an extra layer in such a way that it cannot hold the rain. Then out comes the great hook, before which long shaggy ends become a solid wall of straw, finished off with a neatness that would please even a barber.

Finishing Touches

The foundation layer of straw is kept in place by lengths of tarred twine threaded into a needle and passed between the rafters with the help of the 'prentice in the room below. Rough patches are held in place by ropes of twisted straw and hazel pegs, and it is in these finishing touches that a thatcher often shows characteristics that make it possible to identify his work in many an unexpected corner. Old-time thatchers, for whom time held no terror, loved to cock the thatch into a peak at the end of



THE HURDLE MAKER

A Berkshire villager, in the Vale of the White Horse, spoke-shaving poles for hurdles.

the building, or carry it in swelling curves over dormers, putting a line of zigzag hazel rods along the ridge.

It is so with our Hertfordshire thatchers, for their work stands out with unblushing pride in places so far apart that you wonder at the power of that ancient car. But for all their delight in the artistry of their work, they waste no time. They move over the roof with such a sure, businesslike knowledge of what has to be done next that they seem to pass from job to job without pausing, without, in fact, even stopping to cock an eye at the weather. From the time the burly young man, son of an artist in thatching, and an artist himself, trundles his water butt on wheels down to the pump in the morning till the old car shivers with the sudden awakening of its being in the evening, they are busy about the magic of making straw into durable, beautiful roofs. But they are not always busy with the roofs of dwellings and outbuildings. Much of their time is spent thatching stacks, with which they take less care. Yet they still use their ropes of straw and their hazel pegs to good effect.



SKILFUL WORK

To produce a good thickset hedge, which will leave no loopholes for straying sheep, calls for considerable craftsmanship. Above a Warwickshire hedger is seen at work.

Any old straw will not do, even though it is merely a stack that requires attention. There was a time when a little rye was grown to provide straw for thatching, but wheat is now used extensively except in places, such as East Anglia, where true reed is easy to come by. Then sedge grass is also used.

As a rule, a thatcher is paid by the square yard when he is working on a roof; by the stack when he is working on ricks, and, as the farmer pays in this instance for straw and pegs, these are carefully preserved when a stack is demolished.

There are parts of the country, in Buckinghamshire for instance, where garden walls were thatched at one time, and even now you can see the thatch running between buildings like a golden stream leaping along the brick, after the manner of a flame pursuing a trail of powder.

Tomorrow the thatchers finish their work. Their car will trundle into the village for the last time for many months,

maybe years, for there are few other roofs for them to attend in the village; we will be left again without their constant supply of local wisdom, their ready fund of gossip and their amazingly accurate weather lore.

The cottage on which they have been working is no longer a tussle-headed building, its shock of golden hair catching the sun and providing a happy playground for any bird that wants to romp or collect an extra strand of straw They have tamed the for its nest. wind-blown thatch, decorated with the symbols of their artistry, and covered it with a wire mesh to protect it from the marauders. "That will last for a good twenty year ner more," said the elder, when he surveyed his work from the foot of the garden this morning. " Now if it'd been reed 'twould be right for fifty year—but then I won't be here to see that, I'm thinking, and I only hopes they know a good drop of straw be then; else I don't know how the likes of him who has the place'll get on. I

allus thinks the future's a trouble. . . ."

You cannot wander far on any of the footpath ways in the quieter corners of these islands without stumbling on a craftsman busy about his handiwork, either in yard or tumbledown workshop. From the village blacksmith, the tinkle of whose hammer is still one of the most typical village sounds, to the amateur craftsman, like Bill Atkins, postmaster of the Kentish village of West Hougham, who has covered the wooden beams of his cottage with beautiful hand-carved figures, a work that has taken him more than thirty years, you find them pursuing a job that seems to be laden with pleasure even though their wages are not easy to come by.

Many of them still keep alive a local industry that has been overtaken but not ousted entirely by a desire for the cheapness of mass produced articles. You may have difficulty in finding a carpenter still wearing his traditional paper cap as he goes about his tasks,

leaving it off only when he sits at table or goes to bed, but the village woodworker is still a lively, flourishing member of any small community. To the casual visitor he may be carpenter, builder and undertaker, and nothing more. But ask him to help you with a book-case, or to reconstruct part of a cottage, and you will meet the craftsman eager to do a job that will be admired for centuries, a job into which he will pour a soul that is full of delight in the beauty of traditional carving and solidarity.

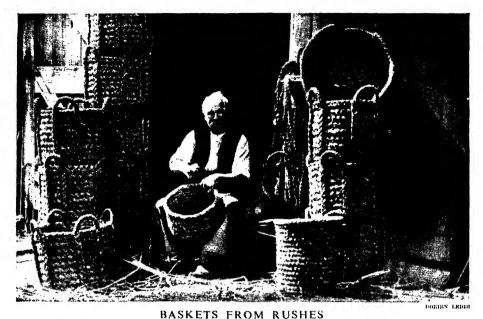
Clinging to Old Ways

Woodworkers seem to cling to their crafts with astonishing persistence, showing a toughness and defiance of modern factory methods that is sufficient to convince the most sceptical of the endurance of rural England. Rows of chair legs, leaning against cottage walls or stacked in cottage gardens, are one of the characteristic sights in many south Buckinghamshire villages; tomorrow



IN ASHDOWN FOREST

Another woodland craftsman is the hoop maker. Ash rods are split and then shaved to the proper thickness. They are made pliable by steaming and then bent into shape.



A Wiltshire basket maker takes advantage of the sunshine. Rushes are his raw material and with them he makes various types of baskets.

you may stumble on a yard that is stacked with wood from which some ingenious soul seems to be producing ladders of every size and shape. You will see a small host of rungs and hear somebody at work in his shed, busily turning oak steps on a hand-worked lathe, humming to the rhythm of the turning wheel. And if you show the proper curiosity, the old craftsman will tell you all about his job; show you the oak steps drying into the side piece, which is of larch "grown in the locality." He will tell you that for giant ladders he must buy the slender lengths of larch from Norway, where they still "grow" ships' masts. He will demonstrate with his lathe how each rung of oak must fit its hole in the larch so as not to strain the wood. But he won't mention that such ladders cost about one and ninepence a foot.

If you seek the true philosophers among our ancient craftsmen you must go into the woodlands where the lesser crafts of forest and coppice find the tasks they love near to the heart of natural things. With them you will find some of the men who are nearest to the eastern hermits, the holy men who live in silent places listening to the voices that we never hear.

These men all use the woods as their workshop and at times as a temporary home, living in camps or rude huts when they are busy at a place far distant from their homes. A few know no other dwelling place, and either move from thicket to thicket, nomads preferring a semi-wild life, or live the retired life of hermits in little-frequented corners of the woods where they have their huts. Such people live on even though the local authorities are always trying to bring them to heel because their ideas of sanitation do not meet with modern approval.

Many of these woodland men are very diffident about their knowledge of wild life, and even when you have gained their confidence you might think they knew little of birds and animals.

It is not that they don't know: these things are so well known to them, in fact, that they don't think their knowledge is anything out of the ordinary. They are surprised, not by what they know, but by what others do not know. And therefore to learn from them you must always be trying to tap their knowledge. We met a party of bodgers"—itinerant makers of chair legs—moving their camp in the Buckinghamshire beech woods. Plantations are systematically grown for them, and as each portion is felled in rotation they move their camp, leaving others to do Some of them were the replanting. employed by the factory by which the ground was owned; others seemed to be independent, working on piece time, as it were. But as they were all far from their homes they were living most days of the week in huts built for their use.

Winter and summer the work goes on around these huts. Trees are sawn into specified lengths, and then, using the bole of the felled tree as a natural chopping-block, these lengths are split into billets. After trimming the billet into the rough form of a leg or rail with a draw shave, the turner leaves the comfortable shaving horse on which he sits astride so easily, and turns to the pole lathe, that ancient tool so popular with village craftsmen and open-air workshops.

The Pole Lathe

Its working parts are simplicity itself. Beneath the rough-and-ready bench there is a large wooden treadle to which a cord is attached. After making one turn around the spindle the cord is then fastened to a long flexible pole. You press down the treadle and the article to be turned begins to spin while the pole is pulled down. The foot is raised at the bottom of the stroke and the pole, straightening itself, pulls up the treadle and gives a contrary spin to the article on which the man is working. With a downward stroke of the foot the tool comes into play again, and soon hand and foot work in unison, the tool being withdrawn quickly and deftly. One of



WORKING BY LAMPLIGHT

Basket making at Sedgemoor where dried withies are quickly and defily woven into baskets of all shapes and sizes.

the headstocks of this simple lathe can be adjusted with wedges so that rails and rods of various lengths can be made with ease, but an experienced turner needs no guiding marks to help him with patterns. Thus you will find the "bodgers," one astride the shaving horse, another in the hut with its two sides and simple roof, busy at the lathe, and a third cutting the billets with axe and mallet. A happy crew that we should never forget.

Hurdle makers are easy to find if you know the right places. They work throughout the year, for only the frost will cause them to drop their tools. Watch the wattle hurdler at work sorting the wood and cutting the uprights into lengths until he has a goodly supply, leaning against a finished hurdle that he uses as a gauge, measuring with his eye. After sharpening the ends of the uprights he sticks into the holes of the frame, he splits the willow rods and laces them swiftly in and out, twisting them at the end to avoid

splitting when he weaves in the other direction. The ends are finished with a hook or light axe, and then he takes the hurdle from its frame and straightens it over his knee, on which he wears a leather pad. A job quickly done by the expert, needing as his tools only a billhook and the frame into which he places the uprights. But if you think it an easy task, try weaving those willow rods backwards and forwards.

There is little call these days for post and rail fences, for wire is taking their place throughout our woodlands, but occasionally you will find an ancient making a gate hurdle, a task that needs many tools and a fund of patience. Once more a framework to hold the hurdle in embryo is needed, and well-seasoned timber is an essential, too. Split while held in the tripod-like framework, the timber is sawn into required lengths and the bark trimmed off, while one end is pointed and the holes for rails bored and shaped. When the uprights are thus ready, rails are



JACK OF ALL TRADES

The wheelwright in the Wiltshire village of Ogbourne St. George, according to his sign-board, is carpenter, wheelwright, undertaker, shoeing and general smith.

TEPHENSON

selected, cut to length and flattened at the ends to fit the mortise. Then they are fitted into the uprights and driven

home; centrepieces and braces are nailed on and, except for any local idiosyncrasies that the hurdler may have developed, such as allowing the cross-bars to project, there you have the gate hurdle. The usual gate hurdle consists of two heads or uprights, five rails, a centre-piece and two cross-bars or braces.

Most fascinating to watch is the clog sole maker, another out-of-doors worker who was once seen only in the north and midlands, but has

appeared in recent years in the south, searching for alder wood or birch. Having sawn his wood into billets of various thicknesses, according to size, the clogger splits it into rough soles and then, standing at his rude bench in the solitude of the deep woods beside the stream, he fashions the clog sole with a curious tool, a long handle equipped with a guillotine-like blade. This soon turns an unshaped billet into a shapely sole in the hands of master clogger. Holding the billet lightly in the toothed plate on his bench, he glances at its sides, and a minimum of strokes gives the desired effect. From the length of each billet he judges with expert eye how much roundness will be needed to a sole by a person with that size of foot. For you see a clog sole is unbendable and the spring must be given by the shape and thickness at the ball of the foot. So another sole is added to the dome-shaped stack through

which the air passes to dry the wood. Hoop making and charcoal burning are also to be numbered among the

> woodland crafts. for they both need an expert's attention, but whereas vou can see a woodland craftsman complete either hoop or hurdle while you linger at his camp, it will take days, probably weeks, to learn the secrets of the charcoal camps, containing as they so many mysteries of earth and fire. Still, if you are a canny soul and seek out those quiet, lovely stretches of friendly country in the midlands so often left unvisited by walkers because



THE WHEELWRIGHT

Fixing the iron tyre on a cart-wheel is an expert's job. The tyre is taken from the fire, placed on the wheel and hammered into position while it is still hot.

of the nearby industrial towns, you will find a few happy craftsmen making hoops for the barrels into which factory hands are to pack crockery. After being sawn into lengths of various sizes, ash rods are split with a cleaving axe and shaved to a proper thickness with a draw knife. When made pliable by steaming they are bent into shape round a "horse" and wired into bundles.

If you are lucky and observant you may find old men and their wives in cottage workshops making wooden hay-rakes and wooden pitch-forks to be used in racing stables; a few villages in Surrey and Sussex still have their local trug maker, the man who turns out those lovely wooden baskets which do so much to help the trade of arts and crafts shops in our more high-minded suburbs.

They make baskets in the Fens, where the raw material is so easily found; they make chestnut pale fencing in Kent; hurdles on Cotswold; cricket



AUTUMN IN SURREY WOODS

A scene in Wotton Woods, near Dorking. Straining horses draw the timber wagon over rough broken ground.

bats in Essex and Cambridge; and in any of those counties not yet given over entirely to industry, you will find the solitary white cooper, where the wooded land best suits his needs. For although churns and wooden tubs are now made in factories, a craftsman who knows how to make wooden bowls and the like easily learns to meet the needs of "antique" dealers in cathedral cities. And of all craftsmen he is indeed the most delightful to watch, for he uses so many tools and is so well versed in the properties of various woods. And his industry depends entirely on his cleverness in handling the most primitive appliances.

Few people can pass by the village smithy without glancing inside, but don't let your fancy end there. In the acrid tavern where the mighty man goes about his craft, you will find he has many more things to do than shoeing horses, a business that is obviously declining. From the time the smith was employed to beat peaceful agriculturat implements into makeshift weapons,

he has been proving that he can be a clever artisan, despite his brawn. To the sob of the bellows he has often made perfect some experimental piece of agricultural machinery, repaired a bicycle or designed some special piece of wrought iron for a builder or a housewife. And in the dark corners of his smithy you will find a strange assortment of implements long laid aside: old wheels, chains, hooks, a tangled mass of machinery in which somebody's dream of making yet another robot lies buried —in fact, a treasure trove of forgotten ironmongery that brings back all the savour of the early industrial England when men were content to make things with their hands.

It is the same in the wheelwright's yard. He has little to do these days. You may even find the façade of a garage hiding his real craft. But tucked away in loft or yard there will be fascinating relics of the horse and carriage age. It is here that you may see a modern tradesman's cart turn from a weather-worn traveller to a smart,

carefully finished example of quality coach building, its paints so well laid that its shining sides make the most expensive car look just a little shabby. It is here that they know the properties of different woods, the tricks that go to the transforming of a clumsy muck cart, the art of springing, how to shrink a tyre on to a wheel-even the knack of making a wheelbarrow. Although many a wheelwright's shop is now closed, a fine old craftsman still known to county people will have plenty to do in his yard, and you will find as much joy and knowledge there as there is to be found as you loiter along a harbour wall, listening to the craftsmen of the sea net tanning and sail making and preparing and making their lobster pots.

Craftsmen you rarely meet these days are the village tailor, that fine old gossip who, carrying his materials and tools with him, would visit farms and cottages to make suits and repair work-worn clothes while he sat on the kitchen table; the village clocksmith, often a mechanical genius who not only repaired clocks with a fine understanding and delicate touch, but also contrived to invent many a strange mechanical novelty that faded out in its prime; and the tinker and knife grinder, both of whom have suffered most severely by the assault of cheap, mass-produced goods.

You may also class the miller and the cobbler and the saddler among these victims of the industrial development. But they do continue in odd places. The shoemaker, always a symbol of sturdy independence, finds less scope for his skill as a shoemaker, but he is still needed to repair the boots of the farm workers, and is skilled in choosing the leather and the nails that best fit their requirements.

Of course, the saddler still has work to do, even if it is only that provided by making leather braces, dog collars and leashes, and repairing the horse trappings, so well beloved of each community, that still favour either earcaps of many

colours or complete sets of bells, face pieces and amulets. The property of the

carter, not the master, these pieces of brass that flash in the sun when the shire horse goes forth in all his glory, are of great interest to the antiquarian, for they hide many a story going back to the dimness of time. As many others, the symbol of star and crescent is of pagan origin, while other pieces are the outcome of some special trade. Nowadays. we learn of the old heavy flaps that stood behind the collar to give shade in hot weather, and of the nets that covered the back, only from retired carters, who also bemoan the time when every leader of a team had his set of bells. But the crescent and the star still flash in the sun when the big shire plods along the highway, the shaking of his feathered fetlocks adding dignity to each stride.

And so, as you pass through the countryside, you take full toll of our remaining craftsmen; a brass plate on a door and a full range of baskets hanging outside a cottage will often lead you to the workshop of a basket maker busy with withies of local growing; the maker of rush seats will be sitting beside



A NEAT BIT OF WORK

There are various styles of shepherd's crook.

A well-known make is produced by the blacksmith at Pyecombe, Sussex.

a cottage door in those districts where rushes grow freely, an itinerant craftsman who is always able to find work; local potters may still be found plying their homely trade, giving the local clay a beauty that shows what dignity our pottery might have if it were still the work of a simple man's hands. You may even find a little kiln working on a Buckinghamshire hillside providing bricks for bakers' ovens, or local stone masons within reach of quarries, giving rein to their fancies in carving headstones for graves, or repairing the mouldering brickwork of old buildings.

Women, too, carry on some local industry that makes them worthy of the name of craftsmen. There are, of course, fewer than there were in the days when women spun and wove the cloth, but they still make gloves, for instance, and in seaboard villages you will find the old wives busily knitting those durable, windproof jerseys for their menfolk, and

talking as fast as their needles click; then there are the lace makers to be found in south-eastern counties and in the midlands, each village having a romantic tradition dating back to the Huguenots or the Flemings, or at least to the days of Catherine of Aragon, while button making is still kept alive in Somerset and Devon.

Enduring Crafts

Thus you find the rural craftsmen at work, still providing things of beauty, despite the overwhelming competition of the great machine. If you wander far enough you may see them all at work, peat cutting, quilting, working at hand looms, cheese making, cider making, coracle making, boat making; they are all happy in their work, full of the arts and crafts that after centuries of service linger on to remind us of other days when life was less complicated but much more comfortable, free and easygoing.



WHEN THE SUN GOES DOWN
At the close of day the shepherd takes his sheep to the fold.

FLOWERS OF FIELD AND WOODLAND

by HUDSON READ

E would be a miserable fellow who could travel far without noticing the flowers of the countryside, and I doubt if such a completely soulless person exists. Without any knowledge of botanical names or technical terms we can appreciate a mist-blue carpet of hyacinths in a wood; we can stand and admire dancing daffodils and waving cowslips and drink in the heady fragrance of meadowsweet, and brighten our journeys with the sight and scent of countless flowers of wayside field and woodland.

We in this country are blessed with hundreds of species of wild flowers and it would be impossible to describe them all in this article. Instead of attempting such a hopeless task, we have endeavoured to depict such flowers as you may expect to find in your travels, and to simplify the presentation of them we have grouped the species in the months in which they bloom.

March

Many banks are now beautified by the yellow flowers of the coltsfoot. These flowers are often mistaken for dandelions, to which family they are related. Actually the coltsfoot is more refined in appearance, and the flower-heads not so large. The flowers bloom before the leaves appear. When the leaves unfold they are bright green above and cottony white beneath, heart-shaped, with toothed edges. The stems are rather cottony, and the average height is four inches to one foot. It is perennial in habit and flowers from March to June.

The plant is found in pastures, especially in districts of stiff clay; it also favours coal-fields. An old name for the plant is cough wort, as it was thought to cure chest complaints.

In pastures, lane-sides, and moist meadows you may find the lesser celandine. Its burnished golden star-like flower consists of six to eight narrow petals. Just before rain the flower closes. The leaves which vary in size are deep green, and usually spotted black or purple-brown. The flower blooms from March to May and is common to most districts. It was the favourite wild flower of Wordsworth, the poet.

Wood anemones or wind flowers, with their creamy white blossoms, make the woods gay. Occasionally, the flowers are purple. The stalk has three finely cut leaves of dark green about halfway down. As the stalk is very slender, the starshaped flowers dance in the slightest

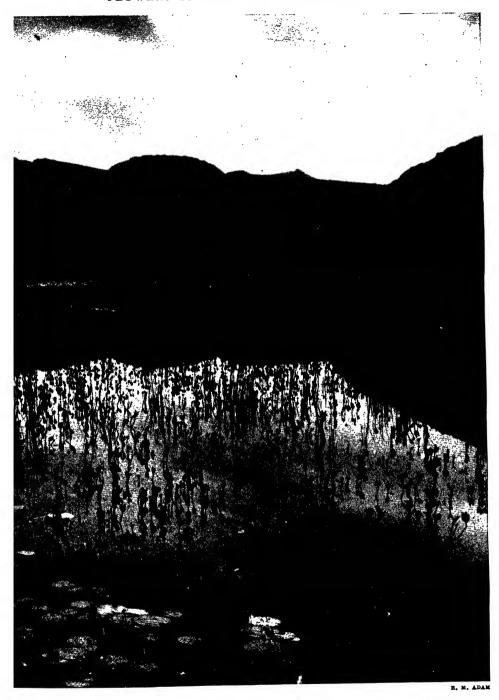


COTTON GRASS

The white tufts of this moorland plant serve us a warning of wet and boggy places.



WATER PLANTS IN A HIGHLAND LOCHAN. IN THE



CKGROUND ARE THE COOLIN HILLS OF SKYE

breeze. This plant is perennial and flowers March to June.

Along the banks of winding streams and old canals the bright yellow marsh marigold is found. The round flower buds are green outside and vivid yellow within; its glossy leaves are heart-shaped with toothed edges. This plant belongs to the buttercup family and flowers March to May.

In sheltered hedgerow nooks the red

In the country the young leaves are sometimes used as a salad. The stems exude a milk-like juice when broken.

On old weathered walls, whitlow grass displays tiny white flowers, clustered at the end of a wavy stalk. The lance-shaped leaves, root and flowers can easily be covered by a two-shilling piece. The plant may be found in flower until June.

Wild daffodils, or "Lent lilies," now



A yellow flower, not unlike the dandelion, growing in fields from February to May. The flower stalks are hollow with small pointed scales.

dead-nettle shows its trumpet-shaped purple flower, with coral red pollen. The heart-shaped leaves grow in pairs. The red dead-nettle has a square stalk, while that of the real stinging nettle is round. This plant possesses no sting and will flower until October.

Dandelions now bloom everywhere, and a more poetical name is "the sunflower of the spring." After the flower has bloomed, the feathery globe of down is a beautiful structure, and the seeds are dispersed when ripe on downy wings.

show their pale golden flowers in forest and meadow. The long narrow leaves grow from the root, and the flower stalk is thick and hollow. Flowers March to April.

On commons and heaths, gorse, whin, or furze begins to glint with golden flowers. Later in the season these bushes will be aflame with yellow blooms, and their perfume will be sweet on the wind. Each flower is borne on a separate stalk, and when seen in the mass have a clustered appearance against the dark



LESSER CELANDINE Has yellow flowers and likes sunny places.



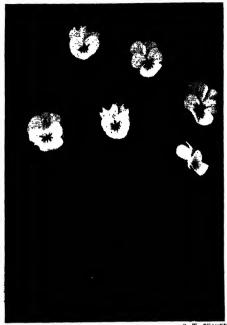
MARSH MARIGOLD Also known as kingcup, it grows on marshes.



WOOD ANEMONE Flowers in bloom from March till June.



DANDELION Grows everywhere from March till October.



HEARTSEASE OR WILD PANSY Flowers are usually deep purple, but the lower petals may be yellow.

green thorny branches. In summer the legumes burst with a crackle-like report as they scatter their polished seeds afield.

Where the hedges give shade the moschatel opens its pale green flowers, which form a tiny globe head. These grow at the end of a fragile stem that reaches a height of four to six inches. The stem leaves are short and the base leaves long-stalked. In the early morning a musk-like fragrance is given off and the plant may be in flower till May.

Among the grass you can discover the chestnut brown flowers of the hairy wood rush in woodlands and shady spots. It will remain in flower until May. In olden times very poor people made lights or candles from the white or soft rush, and in those days Gilbert White, of Selborne, gave instructions how five and a half hours lighting could be obtained for a farthing.

In woods and bushy places the sixpetalled white-green flowers of butcher's broom, or box holly, may be noticed. The leaves are armed with spines, and the much-branched stem grows about three feet high. This plant or shrub belongs to the lily family and is not usually found north of Leicestershire. The curious name of the plant is surmised to be derived from the fact that old-time butchers suspended it about their shops to keep away flies. Some authorities hold the opinion that the butchers used part of the plant as a small broom for "sweeping their blocks."

About the middle of this month, blackthorn, or sloe, hangs its white flowers in the hedgerows, and this shrub puts forth its blooms before the leaves appear. Its name is derived from the blackish colour of the bark. In contrast to the blackthorn, the whitethorn, or hawthorn, opens its leaves before flowering.

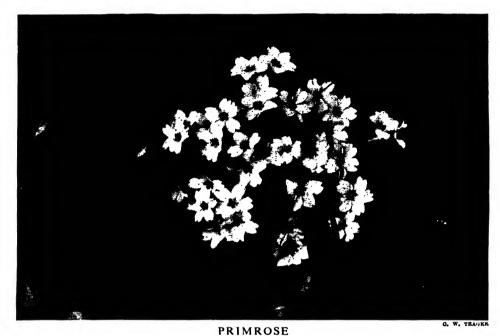
On sheltered banks from March to May the sweet violet may be found wild in the southern counties. The blue, purple-red or white flowers have unequal petals in shape and size, leaves roughly heart-shaped with downy undersides. Leaves frequently enlarge after flowering period. Another of the same family is the wood violet, which may be found in woods and copses from March to July. Next month the marsh violet will bloom about marshes and bogs. The hairy violet favours chalk soils and downs, also the dog violet beautifies banks.

Roughly about forty-five varieties of wild plants, shrubs and trees, can be found in flower this month, when average weather conditions prevail.

April

The white archangel, or white deadnettle, now blooms by hedge sides, and the white flowers which bloom from April to December are set about the square stalk in whorls. The heart-shaped leaves are notched and grow in pairs from the flower stem. The flowers are rich in honey, and these attract the early bees.

Another hedge-side plant is garlic mustard, or Jack-by-the-hedge, which



This well-known flower blooms from March to May, but is often seen earlier in mild weather.



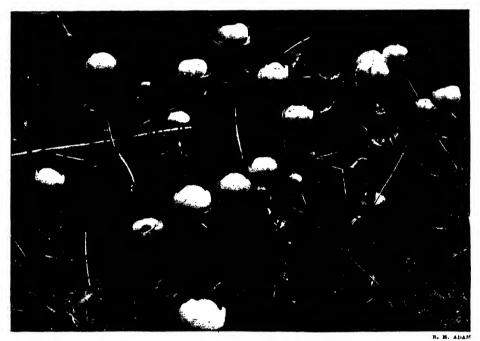
CUT LEAVED SAXIFRAGE

There are many species of saxifrage and they are often found on rocky ground in mountainous districts.

bears small white flowers of four petals and will bloom until June. The leaves have a garlic odour if broken or crushed. Most plants which belong to this cruciferae family have cross-shaped flowers. Greater stitchwort gives beauty to green banks, with its white stars which flower from April until June. The long narrow leaves grow in pairs.

The leaf-mould in woods now begins to be covered by wood sorrel which sheltered lanes and in the woods. The flowers may be found from April to May, and the primrose family in general usually have five petals joined at the base. Few animals will eat this plant.

By woodland streams the small yellowish-green flowers of golden saxi-frage make a golden patch and will bloom until June. The plant has a creeping habit, and its light green spoonshaped leaves make it very easy to find.



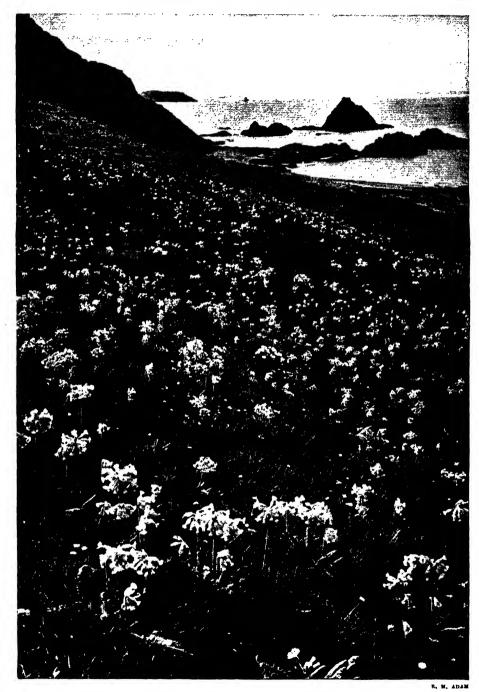
GLOBE FLOWER

A beautiful golden flower which belongs to the buttercup family, and which is often found on hillsides and in marshy places particularly in the north.

carpets it with fresh green leaves and dainty white flowers pencilled with pink lines. It has hairy trefoil leaves which fold at night. A favourite haunt of this plant is an old beech tree stump, or limestone rocks, and it will flower from April until June. On dry hillsides and heaths, the dog violet shows its azure beauty. The bluish-purple flower possesses no scent and will remain in bloom until August.

The primrose is now abundant along

Trailing on hedge banks are the purpleblue flowers of ground ivy that will last until June. The slender square stem lies near the ground and has three flowers to each leaf. At one time the rough kidneyshaped leaves were dried and used as tea. The flowers bloom from April to June. This plant is not related to the real ivy, but belongs to the mint or labiate family. In the meadows, bulbous crowfoot, or buttercup, may be found. This flower has five bright cup-shaped petals and



COWSLIPS BY THE SEA ON THE BERWICKSHIRE COAST



GREATER STITCHWORT

A white flower found from April to July in meadows, pastures and hedgerows.

blooms until July. In olden times it was often called "Saint Anthony's turnip." The plant belongs to the buttercup family.

On heaths and pastures ribwort plantain carries its dark brown spike-like flower on a square stem. The veins on the narrow leaves number five, by which this plant may be recognized. It flowers until October and country children sometimes call it the chimney sweeper.

On open pastures and downs the rich yellow flower of the cowslip will remain in bloom until May. The leaves are inclined to be crinkly and grow from the stalk. It is said that the nightingale is found where cowslips grow. An old country name for the plant is "the pretty mullien" and also "paigle." The leaf of the cowslip is smaller and more narrow than that of the primrose. "Mark the five small spots of red, in the golden chalice shed."

Goldilocks, or wood crowfoot, brightens some quiet lane and wood with its deep golden flowers of five petals. The leaves are different from the meadow crowfoot, being wider apart; the upper leaves are few in number and divided into narrow slips. It grows about a foot high with a branched stem. This plant is more common in England than it is in Ireland or Scotland. It is a species of buttercup, and the petals and seeds are poisonous. Its flowers appear in early spring.

In moist meadows and swamps lady's-smocks display their pale pink or lilac flowers, which have four petals arranged like a Maltese cross. The leaves are divided into narrow leaflets, and the plant reaches about twelve inches in height. Other names are cuckoo flowers and milkmaids.

Along hedgerows and woodland hollows bluebells begin to hang their drooping blue flowers; next month they will be much more advanced.

The meadow buttercup can be found in nearly every meadow and pasture,



LADY'S-SMOCK
This pale pink or lilac flower is also known as the cuckoo flower, and is said to bloom with the coming of that bird,

and is too well known to need description. The creeping crowfoot is found by meadland ditches, and its deep vellow flowers will bloom until August. About a dozen well-known wild flowers belong to the buttercup family, including the lesser celandine and globe flower. Most of this species possess acrid juices, and neither horses nor cows will eat the bulbous buttercup.

In waste places the yellow sow-thistle grows on much-branched stems, one to two feet high. The thin oblong leaves form into toothed leaflets. The seed heads have the appearance of white globes. The plant belongs to the composite or daisy family. Flowers until September.

In woodlands, pastures and meadows the early purple orchid attracts attention with its reddish-purple flowers, which have a spike-like effect. The narrow leaves are coloured with dark purple spots. This plant is the earliest and most common of the various British orchids.



MARSH ORCHIS

One of the most beautiful of the British orchids. Frequently found in water meadows with long spikes of flowers on tall stems.



RED CAMPION

This deep pink flower may be seen on wayside banks from April to August or September. Each petal is divided so that there appear to be ten instead of five.

On old walls and in gravel-pit fields the small pale blue flower of the wall speedwell makes a very pleasing wayside study. The heart-shaped leaves have round teeth-like margins.

May

By hedge banks the neat vellow flower of crosswort or Maywort can be discovered. The flowers cluster about the ring of leaves, which are found along the stem in fours, and the square stem reaches a height of six to twelve inches.

Although it bears rather an unpleasant name, the lousewort, with its pinkish-red flowers and fern-like leaves, brightens poor pastures. This plant bears its curious name because at one time it was used to drive vermin away. It will flower until August, and belongs to the figwort family.

In woods, fields and waste land the purple or white flower of the bugle is



CRANE'S - BILL

A member of the geranium family with large purple blue flowers.

found. By the edge of the lane beaked parsley, or wild chervil, gives beauty with its umbels of tiny white flowers, which appear until June. Its pretty leaves are lace-like.

The red scentless flower of ragged robin gives colour to ditch sides, damp meadows and marshes. The deeply cut petals give an untidy look to the flower, which blooms until August. The leaves are light green.

By stream and sloping bank, germander speedwell makes a drift of blue that will last until June. The bright blue flowers, with a dot of white in the middle, are the largest of the speedwells. The leaves grow in pairs. It is often nicknamed "bird's-eye." Outside the wood, red campion is in flower, and will beautify damp hedge banks until September. The taper-shaped long hairy leaves grow in pairs. This flower is also named "red catchfly" and "red robin."

On woodland borders the wood avens, or herb bennet, displays small yellow

flowers on stems sometimes three feet high. Formerly, this plant was called herb Benedict, and it blooms until August. Herb Robert is one of our native geraniums and may be found on limestone, old walls and hedge banks. It bears a small pink flower, well veined, and will bloom until August. The erect stem is usually of a red shade and branched. The dove's-foot crane's-bill is found on waysides and pastures. The small pink flowers grow two on a stalk and bloom until September. The leaves have seven wedge-shaped lobes.

Under shady hedges may be found the curious plant known as arum, wakerobin or cuckoo-pint. The white-yellowish hood is attractive and shelters a pinkish-brown spike. Later its small green stem bears a cluster of scarlet berries, and its flowers appear in May and June.

On railway banks, pastures and downs, bird's-foot trefoil puts forth bright

yellow flowers that will bloom until October. Before the buds open they are a deep red. The seed capsules are arranged like a bird's foot.

During this month and in June, ponds and little-used canals are pretty with the white flowers of water crowfoot. The floating leaves are kidney-shaped. The bright yellow flower of tormentil is to be seen on dry heaths, fields and banks until September. Usually the leaves have three leaflets, occasionally five are found.

On light dry soil charlock, or wild mustard, shines its yellow flower that will continue to bloom until August. The rough leaves are lyre-shaped with scalloped edges. Each pod has a beaked point and contains six black seeds.

The pepperwort decorates field corners with its white cruciferous flowers from May to August. The leaves are inclined to be spoon-shaped. This plant is common in England on dry soils, but very rarely found in Scotland and Ireland.

Corn camomile finds a home in fields and waste places, and is common to most districts except the north. The long stalks carry a single flower of white, with yellow centre, daisy-like in appearance. The stem is branched and the plant has a bitter juice when broken. In flower until August.

In cornfields you may find the pale yellow flowers of corn crowfoot. It has smooth pale green leaves of a narrow design.

In occasional gravel-pits the small clustered yellow flowers of the mouse-tail, on leafless stalks, may be seen. The grass-like leaves are narrow. This plant is not common, and favours eastern counties. In meadows, pastures and woods, the red-green drooping flowers of common sorrel cluster about the leafless stalks that bear arrow-shaped leaves at their base. This plant is perennial and grows one to two feet high. Sheep's sorrel is a smaller variety which grows from six inches to eighteen inches in favourable conditions. The leaves, which are acid, often turn a reddish

colour. Both varieties flower May to August.

In grasslands the yellow-rattle crowds its quaint yellow flowers on short erect stalks, which are square and twelve inches high. In hayfields and pastures the ox-eye daisy, or moon daisy, shows a white and yellow bloom on each long flowering stalk. This flower closes at night and before bad weather.

By brook-side and river-bank the pale yellow or reddish-purple flower of the comfrey is found. The large leaves are lance-shaped with wavy edges.

Brooklime makes gay the ditch-side with its small bright blue flower that may be found until September. The leaves are smooth, thick and oblong.

The greater celandine makes it home about ruins and waste places, and its yellow flowers are carried on the smaller stalks that branch from the main stem. This plant is not related to the lesser



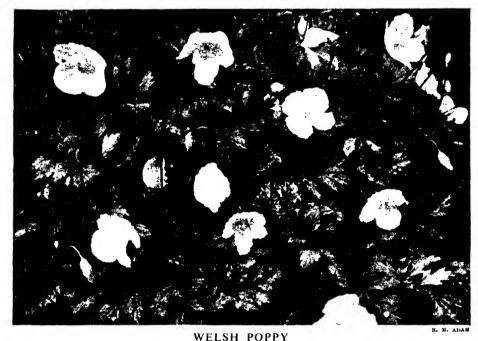
BLUEBELL
The bluebell, or wild hyacinth, is a familiar flower in woodlands and glades from March to May.

celandine, as it belongs to the poppy family and not to the buttercup family.

June

Along the damp meadows the bluishpurple flowers of the meadow crane's-bill are found. The circular leaves are divided into five and seven leaflets with notched margins. Another flower of the same family is the wood crane's-bill. The large round leaves have five or seven lobes. flowers in dense cymes give fragrance and beauty to the banks of old canals and damp places. The reddish stems grow to three or four feet high, and the leaves on the underside are downy and white. In spite of its sweetness, the flowers give no honey. The plant is often called "queen of the meadows," and belongs to the rose family.

On sun-dried banks the pale yellow flowers of the mouse-ear hawkweed are



A beautiful blue poppy which grows on the hills of Wales.

Both belong to the geranium family. By stream-side and in wet meadows the great or cat's valerian bears corymbs of flowers that vary from pink to white, on stems two to three feet high. The lance-shaped leaves grow in pairs, and the plant flowers from June to August. An old name of the plant is all-heal. Cats and rats like the scent of the plant when dried. Marsh valerian favours similar situations and bears pale pink flowers until the end of the month.

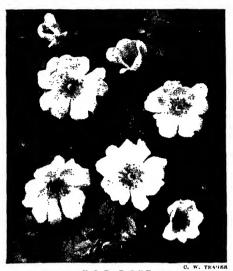
A favourite flower of the month is meadow-sweet, and its creamy white

attractive. The flowers are carried at the end of a leafless stalk about five to six inches high, and the small hairy leaves are crowded at the base of the stem and shaped like the ear of a mouse. In flower from June until August. Other hawkweeds make a golden array, but the family is too large to detail, as it covers about thirty varieties.

The margins of country roads and grasslands are enlivened by the golden flower of the cinquefoil, which is sometimes mistaken for a buttercup. The leaves are divided into five leaflets



A tall plant with many purple thimble-like flowers on each stem.



DOG ROSE

A dainty pink flower of the hedgerows where its flowers may be seen from June till August.



HAREBELL

This dainty flower which flourishes on heaths and in meadows is also known as the Scottish bluebell.



TRAVELLER'S JOY

This plant, which bears white flowers from June to September, is also known as "old man's beard."



WHITE WATER LILY

JUHN MARKHAM

An easily recognized plant with very large floating leaves, sometimes overlapping and covering a considerable portion of a pond or lake.

with toothed margins, and the stem has a creeping habit. Flowers until September. Silverweed belongs to the same family, and the solitary yellow flowers measure about three-quarters of an inch. This plant may be recognized by the silver grey on the underside of the leaves, from which the plant gets its name of "silverweed." It is found in flower from June until August.

Another flower of roadside wastes is yarrow, or milfoil, and the flat-headed cluster of pink or white flowers will bloom until autumn. The stem is furrowed, tough in texture, and grows about a foot high. Leaves much divided. Nicknames, "old man's pepper" and "nose-bleed." Sneezewort is a similar plant and flowers about a month later. According to legend, Achilles is said to have used yarrow to stanch his wounds.

About heaths and dry banks harebells swing their blue or white flowers on slender stalks. The leaves are long and narrow, and those around the root are inclined to be round and notched. Some authorities consider that the correct name of this plant is heatherbell—it is called the bluebell in Scotland—but the real bluebell in the midlands and south of England is the wild hyacinth.

Around uncultivated meadows, thickets and hedges, hog-weed or cow parsley shows umbels of white flowers that will last until September. The rough stem is hollowed and grooved and sometimes reaches six feet high. The large leaves have a drab, dusty appearance. About field borders hemlock shows small white flowers, and about a dozen of these small umbels make one compound umbel. Delicately divided leaves are carried on smooth stems, usually spotted with red; flowers until July. The earth-nut also shows compound umbels of white flowers that bloom throughout summer. Most people can recognize this plant as the pig-nut of childhood days.

On woodland slopes and in lush grass foxgloves hang purple bells on a strong

flower stalk several feet high, and the thimble-like flower is seen until September. The downy wrinkled leaves are stalked.

An attractive white flower of the beech woods is the woodruff. The bright green leaves are narrow and rough at the edges, in whorls that may number seven to nine.

Along dry banks lady's bedstraw displays its yellow flowers from June to September, and the small blooms have four petals like a Maltese cross. When seen in the mass these flowers are most effective. The narrow grass-like leaves are ringed about the stem. Wood sanicle shyly shows its pinkish-white flowers, about woods and tree-shaded lanes, from May until July.

The poppies, scarlet flowers of four petals, mingle in the cornfields, and the rough-headed poppy is also found there and its smaller petals have a black mark at the base. The long smooth-headed

poppy has light scarlet flowers made up of broad petals in unequal pairs. The smallest of the four varieties is the long prickly-headed poppy. Most poppies may be seen in flower from June until August.

The scarlet pimpernel hides its small red flowers about the borders of cornfields. The leaves and flower stalks are in pairs. Another name is "poor man's weather-glass," as its flowers always close before a storm. Flowers May until November. By the cornfield hedge the daisy-like flower of mayweed, or corn feverfew, shows its pincushion-like flower of yellow and white. The flower has no scent and blooms from June until October.

Along some tree-fringed waterway forget-me-nots make patches of blue that will last until July. The slender light green leaves are spoon-shaped. Stream margins are also gay with the golden flowers of yellow iris, or flag, from May



ROSE-BAY WILLOW-HERB

A tall plant sometimes six feet high. It grows on the edges of woods and copses and bears a number of pink flowers on each stem. The flowers on the lower part of the stem open before those above, so that blooms are sometimes seen at the top with seeds below.

to July. The sharp pointed leaves are like green swords on guard.

July

From June until September the clustered purple-blue flowers of the tufted vetch hang about hedge and bush on their climbing stems. Bright splashes of colour are also made by the small yellow flowers of the meadow pea, or meadow vetchling, in copse, meadow and on banks. This plant has broader petals and not so many leaves as most of the vetches, and a three-cleft tendril grows between the narrow leaves; the stem is several feet long.

On dry pastures and hillsides, kidney vetch, often called "lady's fingers," shows bright yellow flower-heads until August. The leaves are of a bluish shade and consist of five to nine leaflets. In coastal districts the flowers may be cream, crimson or purple, and the plant is more stunted in habit. Roughly about a dozen different kinds of vetches may be discovered in flower during the



FLOWERING RUSH

A pretty water plant with spear-like leaves
and with a bunch or umbel of rose-coloured
flowers at the head of each stem.



FOOL'S PARSLEY
This plant grows in fields and hedgerows
It has divided fern-like leaves and from
July to September bears clusters of little
white flowers with an unattractive scent.

summer months. They belong to the pea family and include horseshoe vetch and most clovers, or trefoils.

In and about shady places hedge woundwort shows dusky purple flowers, spotted dark red, that grow in a series of rings up the stem. The rough, erectbranched stalk reaches two to three feet high, and the heart-shaped leaves are toothed at the edge and covered with bristles. It is perennial and flowers from June until August. Marsh woundwort may be recognized by its paler flowers, narrower leaves and shorter stalks, and is found in flower from summer to autumn about river banks and marshy places.

Another flower of the waterways and ditches is the skull-cap, with its pale blue flowers in pairs above the leaves. The lance-shaped toothed leaves also grow in pairs on an erect stem of over a foot in height. The lesser skull-cap is smaller than the above species, with flowers of a

paler purple with crimson dots on the lip. The slender-branched stem is only about six inches long. The flowers bloom from July until October.

Another beautiful flower of the waterside is purple loosestrife, with its star-like flower of six petals, which grow in rings about the stalk. The stemless lance-shaped leaves grow in twos or threes about the stalk, and the undersides are grey, due to downy hairs. It is found in bloom from July until September. Water figwort, or water betony, is also found by the waterside, as its name suggests. The green and brown flowers, shaped like an ancient helmet, are carried on a stem from three to four feet high.

In some southern districts they greatly exceed this height. Its flowers bloom from July to September.

About deserted backwaters the flowering rush brings forth its pink flower of six petals, one on each branched stalk. rush-like stem has no leaves, as these grow at the base; in appearance they are narrow and sword-like. This plant flowers from June to July. Just above the water may be noticed the three white petals of arrowhead in a series of three flowers, carried about six inches above the water on a leafless stem. The arrow-shaped leaves float on the water.

Wastes and watersides are transformed into a wild garden by the rose-coloured flowers of the willow-herb, which flowers from July to August. The hairy lance-shaped leaves that clasp the stem have small saw-like Another old country edges. name for the plant is "codlins and cream." The small-flowered willow-herb is similar to the above-mentioned variety except that the rosy purple flowers are smaller and the stalk more branched nearer the top; blooms July and August on river banks

and ditch sides. Another variety is the square-stalked willow-herb which has small rose-lilac flowers on a branched stem one to two feet high; flowers July and August. The marsh willow-herb also has small rose-lilac flowers that bloom July and August in marshy places.

The rose-bay willow-herb, or French willow as it is sometimes called, favours woodlands. And when the racemes of rose-coloured flowers are seen in a mass they make a wonderful sight from July to August. There are about nine different willow-herbs that grow in this country.

On poor pastures and fields the bright pink blossoms of rest harrow are seen. The leaves and stem are hairy, and it is



WILD FRITILLARIES
This beautiful meadow plant is also known as snake's head from the shape of its flowers.

C.C.—E



A little plant which grows from two to six inches high. It has deeply cut leaves and bears numerous white or purplish flowers.



Found in many counties in the south of England it may grow to a height of four feet.

It has soft velvety leaves and bears bluish-white flowers.

believed that only the donkey will eat this plant. Its tough habit and roots make the ground hard to harrow where it grows, and this is the clue to its name. Belongs to the pea family and is found in flower June until September.

Sainfoin, or cock's head, may be found wild on chalk downs and hills, and its spikes of bright pink flowers are veined a deeper tint. The leaf is made up of about twenty-four leaflets. Flowers in

from June until September. Another name for this plant is bittersweet.

The yellow button-like flowers of tansy are found by roadsides and on embankments from July to September.

August

By damp woods and streams, angelica gives stately beauty with its regular white or pale purple flowers, carried on umbels which form a compound umbel.



MONEYWORT

C. W. TEAGER

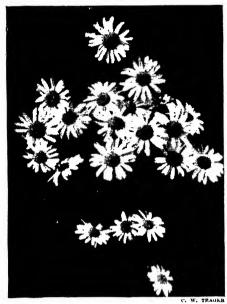
Creeping Jenny is another name for this plant, which grows in damp woods and moist places and bears yellow flowers in June and July.

bloom from June until August, and is related to the pea family.

The small white or pink flowers of marsh pennywort are found about marshes and boglands from June until August. It has undivided round leaves on long stalks and the stems creep in the mud. Also, about the waterside herbage is the woody nightshade, and its characteristic small flowers of yellow and purple are easily recognized. The leaves are both heart-shaped and spear-shaped, and are dark green. The flowers bloom

On the strong hollow stem, which may reach a height of five to six feet, are arranged triangular leaves, three in number, on stalks from the main stem. "Holy ghost" is an old name for this plant, but for what reason is not quite clear. Flowers July until September.

Another plant of the wet pastures is the common bur-marigold, which blooms from July to August. The flowers have no actual petals, but cluster together on the branched stalks in a brown or yellowish-green flower head. The smooth



SCENTLESS MAYWEED

Like the corn marigold this plant is also a member of the daisy family.



ST. JOHN'S WORT In thickets and hedgerows this plant bears yellow flowers from July to September.



CORN MARIGOLD

Large white and golden-yellow flower heads
on stout stalks distinguish this plant.



GROUNDSEL

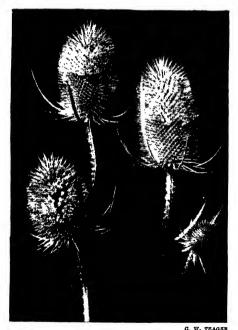
Bearing yellow flowers all the year round,
groundsel grows everywhere.

round stem grows about two feet high, and the root leaves are somewhat swordshape.

À pungent odour of water mint may be detected by the waterside. The small blue or lilac flowers are in whorls, and the hair-covered oval leaves have indented edges and are carried on square stalks. Flowers August and September.

During this month the wild teasel, or barber's bush, flowers by the wayside and in waste places. The purple or lilac flowers are ringed about the bristle cone, and the tough prickly stem grows to a height of six feet. Flowers August and September. The small teasel is similar to the above, but of more slender habit; flowers at the same period and is found in moist hedges.

On heaths and pastures the devil's-bit scabious displays its dark purple flower that reminds one of a pincushion. The stalkless stem leaves grow in pairs and are delicately toothed, while the base leaves are rather egg-shaped. The



TEASEL
This curious plant bears prickly heads of purple flowers on spined stems.



RAGWORT

This plant grows almost anywhere and from June to November bears clusters of yellow, daisy-like flower heads.

slender stem reaches between twelve and eighteen inches. Flowers July until October. Field scabious gives dots of colour to cornfields and waysides with its pale lilac flower. These grow on thin stalks from about two to three feet high. It flowers from June until September.

The purple-red flowers of the common hemp agrimony make a pretty picture on moist neglected ground. The three- or four-feet reddish stems are branched at the top, and the stalked leaves have three to five lance-shaped leaves. Flowers July until October.

The white flowers of the water dropwort appear from summer to autumn by ditches and marshes. This plant varies in height from several inches to three feet.

At this season of the year the rich gold flowers of the ragwort make a pleasant sight on neglected land. The erect branched leafy stem reaches several teet high, with stalked leaves at the base. Other names of this plant are staggerwort and ragweed. The plant is perennial and flowers June to October. Water ragwort is similar to the above, but more branched and of a more slender habit. Flowers July and August.

About the bushy margins of woods and thickets the red-purple florets of saw-wort are seen until September. The leaves are notched in a saw-like fashion about their edges. At one time a dye was obtained from this plant.

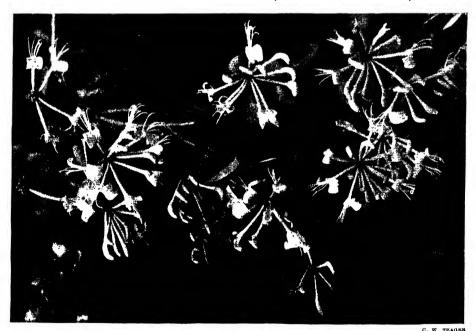
In nooks and wayside corners the common mallow makes a dash of colour with its large red-purplish flowers pencilled with a darker shade. The leaves are roundish with edges cut into tive or seven lobes. The branching stems reach one to two feet high. The dwarf mallow is found about neglected places. The flowers are smaller than those of the common mallow and they bloom from summer to autumn. Musk

mallow gives off a faint musk scent when rubbed or teased.

On roadsides of a chalky nature marjoram is attractive with its bunches of purple-pink flowers that cluster in a compound head. The oval-shaped leaves are slightly toothed and grow in pairs; stem often reaches one to two feet high.

On hills and heaths wild thyme shows massed whorls of rosy purple flowers, which bloom from June until September. The leaves are small and egg-shaped.

Occasionally, the drab white flower of the white horehound may be seen in dense rings on chalky soil in waste places. The leaves are stalked and wrinkled, and the heavy stem grows about two feet high. The whole plant is aromatic and blooms July until October. At one time it was used as a remedy for coughs. The black horehound is also found by roadsides and is somewhat like the dead-nettle in appearance. The pale reddish-purple flowers bloom from June to September. It has heart shaped leaves.



HONEYSUCKLE

This fragrant scented flower blooms in the woods and hedgerows from May until September. The stem, though not very thick, may grow to a length of twenty feet or more.

TREES OF THE COUNTRYSIDE

by A. W. HOLBROOK

→ HE English countryside has the deserved reputation for presenting one of the most beautiful landscapes in the world, and this is largely' due to the wealth and variety of wild trees and shrubs which make our country virtually one large garden.

The custom, which started in England centuries ago, of enclosing the fields by

hedges to prevent cattle from straying and to protect crops, has resulted in the present patchwork appearance of the countryside. Visitors from the other side of the Atlantic, accustomed to see vast areas of pastures and crops, are inclined to laugh at what seem to them to be little " pocket handkerchief " fields. However, it is this fact of the land being intersected by a close network of hedgerows that is the main secret of its great charm.

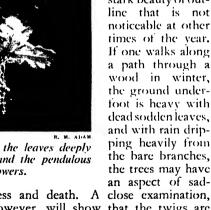
Apart from their own attraction, the hedgerows serve to

give shelter to a profusion of trees. Without the friendly protection of a hedge, young tree seedlings outside woods or copses soon fall a prey to grazing sheep and cattle or to the plough of the farmer. Most of our hedgerows are studded with trees which probably owe their existence to the protection afforded them by the hedge in their early days.

Without trees a country appears stark and uninteresting, however rich the soil and however lush the crops. How few, though, really appreciate the beauty of trees. They are to many people just a background, perceived but

> not noticed. in all seasons and in all weathers our trees are continually presenting to us fresh aspects of their beauty and charm, to which, to their own great loss, multitudes of people are blind.

In the winter, stripped of their leaves, trees have stark beauty of out-

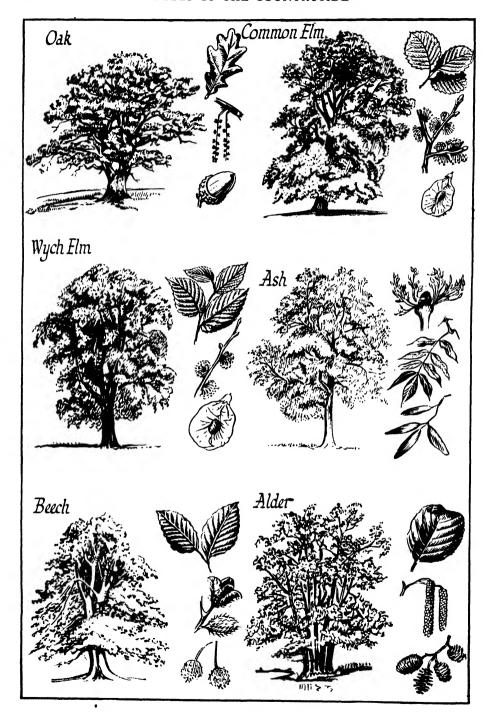


ness and death. A close examination, however, will show that the twigs are crowded with small buds, pregnant with life, and one realizes that the trees are but sleeping and are only awaiting the touch of warm sunshine to awaken them.

The spring is an ever-recurring miracle.



A spray of oak showing the leaves deeply cut into rounded lobes, and the pendulous clusters of flowers.



Some trees are surprisingly early to feel its breath. The elder starts to push out its green shoots in January while at about the same time the hazel is shaking out its yellow tassels or "lambs' tails." Not many trees, however, can face the world so early in the year, and we have to wait till March or April for the real awakening of the trees to begin. By the end of April every hedgerow, spinney and copse is painted a delicate green as

have flowers of separate sexes. Trees of the latter class can be divided into two distinct categories, those which have both sorts of flower—male and female —on the same tree, and those where a tree bears only male or only female flowers.

In midsummer a drowsy hush seems to come over the trees and, laden with their heavy coats of foliage, they seem to stand and brood moodily in the heat,



AN ANCIENT SPREADING TREE

The oak is the most typical of British trees. Above is seen the "queen" or "major" oak in Sherwood Forest.

the new leaves unfold in their millions. Flowers appear on every tree: the showy white pinnacles of the horse chestnut, the sweet scented golden stars of the lime, and the pendulous red catkins of the poplars. The flowers of some trees are small and inconspicuous and are not generally noticed, yet all trees produce flowers in the spring and start again the wonderful cycle of procreation. In some cases, the male and female elements are both present in the same flower, but other species of trees

while their truits imperceptibly swell and ripen.

Autumn is to some a sad time, as the green life of the country dies down, yet some trees are never more beautiful than when they stand clothed in a glowing red or golden mantle of dying leaves adding waves of colour and contrasting beauty to the landscape.

In fact, to those who love trees and know them, and look at them with a seeing eye, the countryside is a neverending source of wonder and delight.

C.C.--E*

The trees are like beautiful women of whom age cannot wither nor custom stale the infinite variety.

The following pages contain brief descriptions of the more common trees and shrubs which, it is hoped, will enable them to be readily identified.

Oak. Pride of place among British indigenous trees must certainly be given to the oak. Its roots are deeply buried in our history, and it is one of the few undoubted native trees of this island of ours.

Among the early inhabitants of Britain the oak was always the object of special veneration, and druidical religious rites and primitive courts of justice used to be held under its branches. Later, the oak acquired great importance for the construction of ships. The "wooden walls of England " or " hearts of oak," as they have been called, were all made from the tough timber of this tree, the angular branches of which were especially conveniently shaped for the frames of wooden ships.

The oak is a magnificent, sturdy tree,

and develops a huge strong trunk, firmly rooted in the ground, and massive spreading limbs. It is a very long-lived tree and some oaks seem to be almost eternal, century after century having passed over their heads and left them unchanged. Some rugged old veterans are estimated to have lived for over 2.000 years.

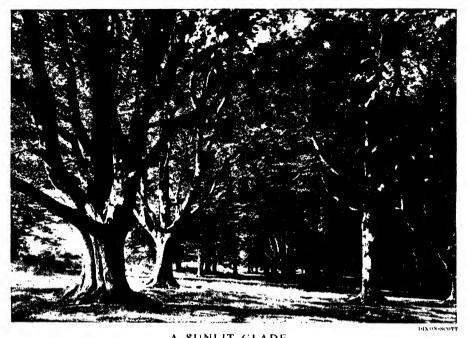
The tree does not grow very tall but, as it ages, the great span of its spreading crown usually exceeds the height of the tree. Oaks are found growing in almost any soil, but thrive best in clay or a rich loam. The long leaves, cut into rounded lobes are too well known to need further description. They have a reddish tint when they first appear, but during the summer their colour is a yellow

The flowers are of separate sexes and both kinds grow on the same tree. The male flowers are little balls of vellow stamens arranged along hanging The female flowers are tiny green ovoids in scaly cups, and later turn into the well-known acorns. These





These two photographs of the same tree in summer and winter show the characteristic outline of the elm.



A SUNLIT GLADE
The beech is found all over England, but flourishes particularly on chalk soils. Above are
the famous Frithsden Beeches at Ashridge, Hertfordshire.

acorns are a favourite food of squirrels and pigs, and were even eaten by men in olden days in times of want. The leaves turn a reddish brown in the autumn and remain very late on the tree. On young oaks the dead leaves often stay on the twigs throughout the winter.

Elms. The elm is found all over England, and it is probably our most common tree, yet it is doubtful whether it is a native, as the common elm will not reproduce from seed in our climate.

A peculiarity of the elms is that they flower early and produce their seeds before any leaves appear. Little bunches of narrow bell-shaped flowers, purple tipped and with purple stamens, break from the buds in February or March, and a ruddy glow gradually steals over the tree. The flowers turn into rounded green envelopes, notched at the tip, and each containing a seed. These are very numerous and give the appearance of the tree being well in leaf although not a

single leaf bud may have opened. During April, about the time the leaves are unfolding, these seed vessels blow off the tree. The foliage is a dark bluish green in summer and in the autumn turns in patches to bright yellow.

There are two main varieties of tree in this country, the common elm and the wych elm. They both flourish in almost any soil, but grow quickest in a light loam.

The common elm is a tall upright tree, usually with one straight main trunk though this sometimes divides into two. The seed vessels are deeply notched. As stated above, these seeds will not germinate in England, but the common elm propagates itself freely by means of suckers which it sends up from the roots. The leaves are small, about two inches long, a pointed oval in shape, with a markedly unsymmetrical base. Also the surfaces are rough and the margins are doubly serrated.

The wych elm is a less upright tree and the main trunk divides into a number of spreading branches. The seed vessels are only slightly notched. These seeds will germinate if planted. The leaves are large and are very rough. A variety of wych elm has smooth leaves, but this is not very commonly met.

Elms are not very long-lived trees and, common elms in particular, are subject to an internal decay which rots away the wood inside without any outward indication. For this reason it is dangerous to sit under old elms, as large branches may come crashing to the ground without any warning.

Ash. This is another of our common native trees, found all over the country, particularly in low lying, well watered sites.

Many quaint superstitions used to exist with regard to this tree. Our ancestors used to believe that a crippled or diseased child would be cured if passed through a cleft in an ash tree.

The bark of the trunk is greyish, smooth on young trees but splitting into a network of fissures on older trees. The flowers come out before the leaves, and on first appearance are like small purple fruits. These open out into sprays of little flowers, each consisting of a green pistil and two purple stamens. Some trees do not flower every year.

The Oak and the Ash

The leaves are pinnate, i.e., each leaf consists of a stem with a number of pairs of leaflets along it. They are very late in appearing, and nearly all other trees are green before the ash shows a leaf. It is difficult to reconcile the old saying, "Ash before oak there'll be a soak, oak before ash there'll be a splash," with the usual soaking to which we are subjected in the English summer, unless the saw refers to the time at which the flowers of oak and ash appear. The oak is always in leaf long before the ash.

The fruits consist of hanging bunches of flat "keys," or membranous envelopes

each containing a seed. These are twisted in shape, and as they fall they whirl round in the air and remain afloat long enough for the wind to blow them clear of the tree. They usually hang on the twigs until the next spring.

The leaves assume no bright autumnal tints, but early in the autumn they wither and drop from the tree. The twigs in winter are unmistakable. They are rather stout, grey in colour, and have black sooty buds arranged along them in opposite pairs with a large black terminal bud.

The foliage is not so dense as that of the beech or horse chestnut, and the ash is light and airy looking in comparison.

A "weeping" form of the tree is often found in which all the branches turn down and droop to the ground.

A Stately Tree

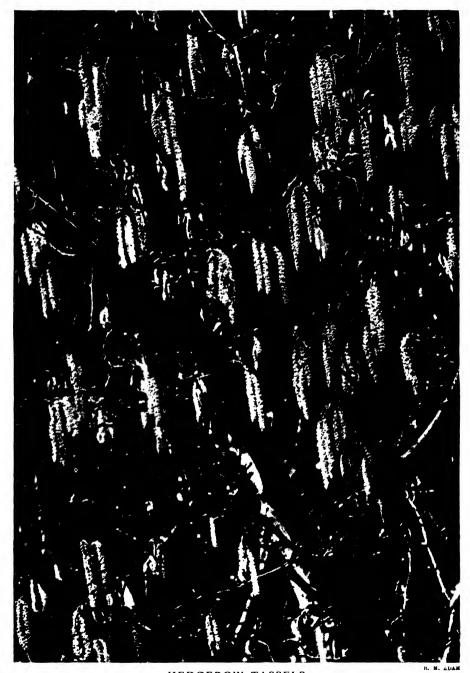
Beech. This magnificent tree can be found growing freely all over England, and is particularly abundant in chalky soils. It is easily recognized by its smooth, pale grey bark and its long, spindle-shaped buds in the winter.

In the spring there are few more beautiful sights than the delicate pale green of the young beech leaves with their fringes of silky down. In shape they are a pointed oval with plain edges.

The male flowers are hanging clusters of golden-headed stamens, while the female flowers, found on the same tree, are small ragged green tufts.

The beech in its full glory of summer foliage is a wonderful sight. The tree is completely clothed in leaves, and spreads such a mantle over the ground that a beech grove provides a cool dim retreat, even in the hottest weather. Nothing else can grow near a beech, and the ground round one is barren, covered only with the litter of beech nut husks, broken twigs and dead leaves.

The fruit of the tree, the beech nut, must be familiar to everyone. The shining three-cornered nuts grow in a pointed hairy case, which splits open in the autumn to release them. In the



HEDGEROW TASSELS

The alder flowers in winter and the catkins hang from leafless twigs.

autumn the foliage turns ruddy brown or orange.

The copper beech is a well-known variety, though this is not found growing wild as a rule. The leaves of this tree are a light copper colour in the spring, gradually turning during the summer to a dark purple. Another variety, less well known, is the cut beech, which has its leaves cut into deep lobes, but is otherwise similar to the ordinary beech. The beech is also sometimes found in weeping form.

Like the oak, the beech has always been valued for its nuts, which were once much used for feeding pigs.

Alder. This tree grows along the banks of streams and in other damp places. It can be recognized in winter by its purple buds and by the large number of empty "cones" all over the tree. It has a straight trunk with brown bark and rather short straggling branches. The leaves taper from a point at the stem to a broad rounded head, with a central notch. The margins are toothed.

Hanging Red Tassels

Male and female flowers grow on the same tree. In dormant form they can be seen on the twigs during the winter, having been formed in the previous autumn. The male flowers are small green cylinders which open out into hanging red tassels. The female flowers are small ovoids which turn into green egg-shaped "cones." These become brown and woody in the autumn and the scales gape to release the seeds, but the empty cones stay on the twigs all the winter.

The leaves stay on very late, but have no pleasant autumn colours: they merely get darker in colour until they fall

Some alders grow in shrub form and never attain the size of a tree. A variety of the tree is sometimes found where the leaf is entirely different, being long and narrow with the edges cut into sharp lobes.

Rowan. This tree is more commonly known in England as the mountain ash,

presumably because its leaves are compound (pinnate shape) like those of the ash. The rowan, however, does not resemble the ash in any other way, nor is it related to the ash, but is one of the apple family. It is called in some parts the "quickbeam" or "fowler's service tree." The last name has reference to the fact that bird snarers used to bait their traps with its bright red berries.

Charm Against Witches

The tree was traditionally believed to be a powerful charm against witchcraft, and small bunches of the twigs used to be nailed up outside cattle sheds to keep the beasts from harm.

It is a small tree which flourishes on hill-sides and in poor soils. The bark is quite smooth and a light grey in colour. It produces large numbers of clusters of small white flowers in the spring. They often number as many as two hundred in a cluster, and are succeeded by red berries which are a favourite food of the birds. The tree is still beautiful in the autumn, when the foliage turns reddish gold.

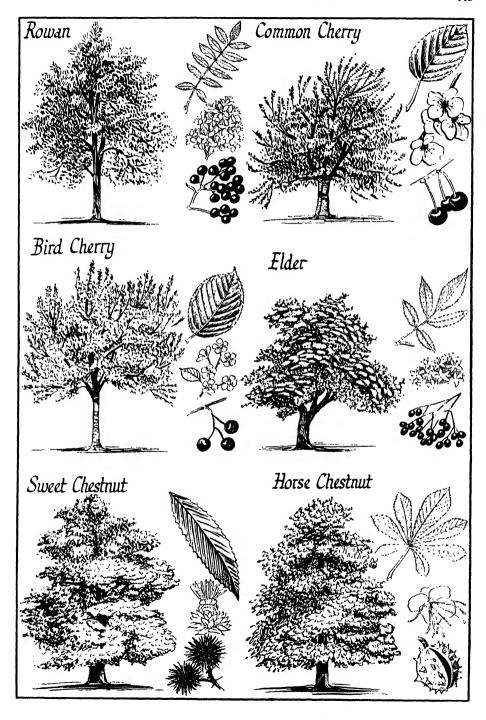
In days gone by, the tough flexible branches were used to make bows, and were almost as good as the yew branches for this purpose.

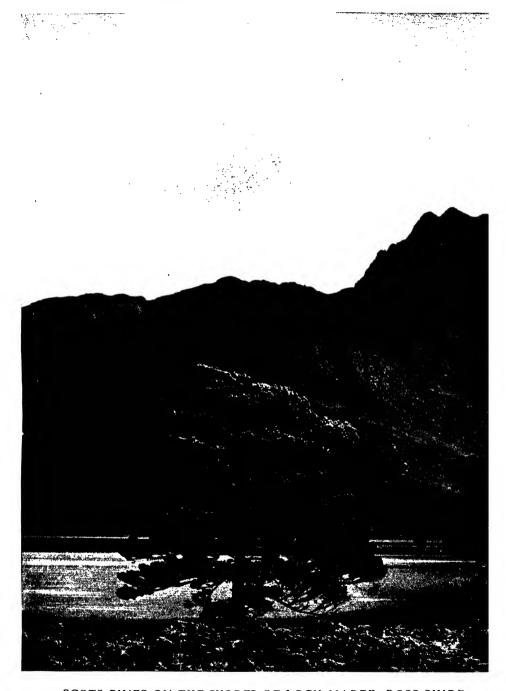
Gean or Common Cherry. This grows to quite a large tree, and will do well in poor soils and exposed sites. It can be recognized by its smooth pale brown bark, which is marked by tine horizontal splits. It stands out at roadside or in copse in spring by reason of its plentiful show of white blossom. The leaves are a long pointed oval with roughly serrated margins. They droop down from the twigs.

The fruit, though soon devoured by the birds, is bitter and unpalatable to our taste. The cherries are somewhat smaller than the cultivated variety and are black when ripe.

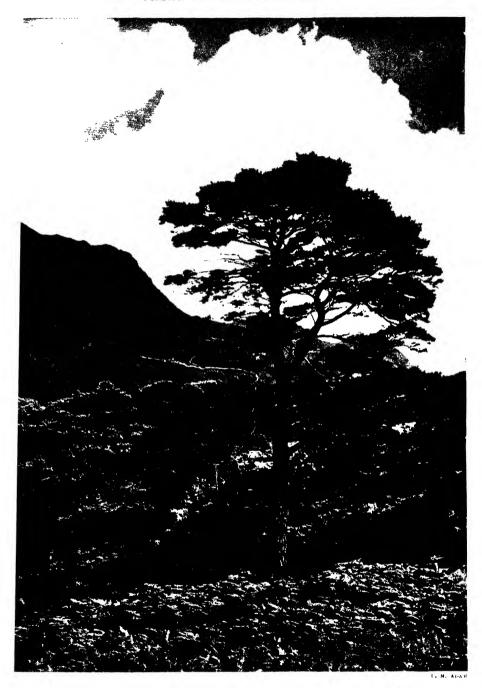
In autumn the foliage turns a beautiful crimson.

Elder. This is usually found as a hedgerow shrub, but occasionally it grows as a small tree. Its leaves are





SCOTS PINES ON THE SHORES OF LOCH MAREE, ROSS-SHIRE.



N THE BACKGROUND ARE THE RUGGED SLOPES OF SLIOCH



WILD CHERRY

In March and April the white blossom of the wild cherry makes a pleasing picture.

compound with two or three pairs of toothed leaflets and a terminal leaflet. The leaves are arranged in opposite pairs on the twigs.

This shrub is the earliest to open out in the spring, and its ragged-looking buds are green in January or February. It produces large flat bunches of tiny white flowers with five petals, and these are succeeded by small black berries. They are still used for concocting a home-made wine. In the autumn the leaves turn yellow tinged with red.

The twigs are pale and rough and are hollow, containing a white pith. Country boys find them useful for making "penny whistles."

Birch. This tree is usually found in company with pines and firs on poor sandy soil and in exposed positions. It is a delicate-looking tree with a light crown of very fine twigs, belying its tough, hardy nature. The silver bark which peels off in strips makes the birch quite unmistakable.

The flowers are found in a dormant state on the twigs in the winter, like those of the alder, and at this stage they are rather similar to those of the latter tree. The male catkins, however, are green when they open out in the spring, not red like those of the alder, while the female flowers are long narrow catkins.

The leaves are small, roughly triangular in shape, with a sharp tapering point. The margins are cut into large irregular teeth. The foliage is never dense, and even in the summer the tree has a light, open appearance. In the autumn the leaves turn to yellow and gold and fall early.

The birch is liable to a disease which causes deformity of the twigs, which in places become interlaced and jumbled up into ragged heaps, looking like crows' nests and popularly known as "witches' brooms."

Sweet Chestnut. This is the true chestnut and must not be confused with

the horse chestnut. It is probably not a native of England, although it has been naturalized here for many centuries. It does not like a very rich soil or stiff clay, and generally thrives best in a sandy loam.

It is a tall upright tree with a stout trunk and short horizontal branches. The bark is furrowed longitudinally, and at the base of the tree the furrows usually have a very marked twist, as if the whole tree had been twisted round. The big, pointed leaves grow up to ten inches in length and have their margins cut into long, sharp teeth.

Sweet Chestnut Flowers

The flowers are very attractive, growing studded along erect green stems. By midsummer these spikes are ablaze with the golden-tipped stamens of the male flowers. The temale flowers are small tufts on the lower ends of the same stems, and turn eventually into sharp prickly green balls. The nuts are contained inside these thorny cases, and their rounded triangular shape is familiar to everybody. In this country the nuts are small and not worth eating, as our climate is not hot enough to produce the fine, large nuts imported from southern Europe, and which we love to roast at the hearth on a winter's evening.

The foliage of the tree turns shades of yellow and brown in autumn, and remains on the twigs till well on into the winter.

Horse Chestnut. This is an Asiatic tree imported into England several centuries ago, and now thoroughly naturalized here. Its real name is Aesculus, and it is not really a chestnut at all. Its popular name is probably due to the fact that the fruits bear some resemblance to real chestnuts. It is a fine large tree with great spreading branches. It is found all over the country, but does best in places where the soil is a rich loam.

It can be recognized in winter by its thick brown twigs, each with a large scaly bud at the end. Other smaller buds on the twigs are arranged in opposite pairs. Below each is a conspicuous leaf scar, not unlike the imprint of a horse's hoof in shape, which may account for our name for the tree.

In the spring the horse chestnut makes a fine show with its large white spikes of flowers, which are studded in great profusion all over the tree. Normally, each flower has only four or five ragged white petals splashed with red and yellow, but a variety exists which produces "double" flowers, each with about fifteen petals crowded together into a bunch. Only a few of the many flowers on each stem come to fruition, and these develop into the well-known spiky green cases containing the glossy brown nuts, the joy of all small boys.

The leaves are enormous and of compound structure. They consist of seven large leaflets, spreading out from the end of the stem like the fingers of a hand. The span of the whole leaf may be as much as twenty inches.

The foliage is very dense and the tree is an imposing sight when in the full panoply of its summer clothing. Its glory soon fades, however, and the



A spray of catkins of the silver birch.

leaves are among the first to start to decay. As early as August they start to droop and to turn a rusty red, and a month later they begin to fall.

Another smaller variety of horse chestnut has scarlet flowers.

Hornbeam. This is a very little-known tree, although it is quite common in many parts of the country. Epping Forest and many other woods north of

branches. Instead of being rounded the trunk is usually of irregular shape, often fluted.

The leaves are not unlike those of an elm, but they are more regularly shaped, with very straight parallel veins. The margins are cut into fine teeth.

The flowers are of two kinds, both growing on the same tree. The male flowers are in the form of pendulous



HORSE CHESTNUTS

Chestnuts in bloom at Aldenham, Hertfordshire.

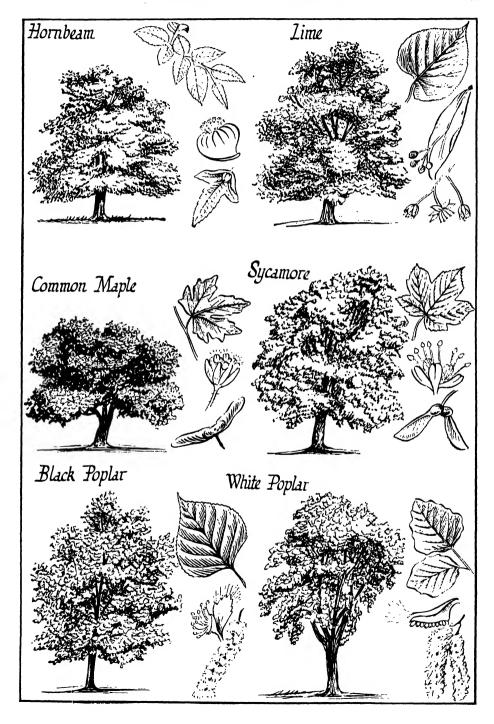
London are, for example, very largely composed of hornbeams.

Most people mistake the tree for an elm because of its leaves, or for a beech because of its smooth grey bark, yet it can very easily be distinguished. Its buds in winter are only about half the size of those of the beech, and they are closely pressed to the twigs, whereas the beech buds stick out from the twig at a wide angle.

The main trunk, with its smooth grey bark, is usually short, dividing into a large number of upward spreading yellow and green catkins, while the female flowers are like small green tassels. The fruits are small hard nuts, about the size of a pea to which are attached three-fingered green bracts.

In the autumn the leaves turn brown, and, as with the oak and the beech, the dead leaves often remain on young trees all the winter through.

Lime or Linden Tree. There are three kinds of lime to be met with in England—the small-leaved lime, the broad-leaved lime, and the common lime. As its name implies, the last is the





LOMBARDY POPLARS
Tall, soaring trees like leafy spires.

most commonly found and has been much planted in avenues both in country estates and in the roads of towns. In order to keep them from overshadowing the houses, the unfortunate limes lining the streets of towns are always severely pollarded and are travesties of what a lime tree should be. When growing freely in an open situation, the tree grows to a great height with a tall straight stem, and straggly angular branches. The bark is a smooth greygreen in young trees and is slightly fissured in old trees, though never very rough.

The flowers grow three or more together at the end of a long green stem. A pale bract, about the same length, is attached to the lower half of the stem. The flowers have five narrow yellow petals and a large number of goldenheaded stamens. They have a very sweet scent and render the air fragrant for many yards around. The bees may always be found swarming round them, collecting their generous supply of honey.

The leaves are easily recognized, being heart shaped with a sharp point and toothed margins. There is little difference in the three species of lime mentioned above except in the size of their leaves, which average up to two, three or four inches respectively in width. The foliage is dense and completely covers the tree in summer.

Yellowing Leaves

In the early autumn the fall of the leaf starts and the leaves have become yellow by August. By this time also the fruits are ripe and start blowing off the tree. They are small round nuts, somewhat furry, and they fall with the long stem and bract still attached, the latter acting as a wing.

The lime survives to a ripe old age, and some trees now living are estimated to have seen more than five hundred summers.

Great Maple or Sycamore. Although widespread and thoroughly domiciled in England, this is not a native tree, but was

introduced some centuries ago from Europe. The word sycamore is derived from the Greek and means a mulberry fig. It is the name given to a species of fig in southern Europe with leaves resembling those of the mulberry. In their ignorance, our ancestors imagined the great maple to be this fig tree because of a fancied similarity between the leaves. Although nobody now supposes this tree to be a fig, there are many who do not know that it is a maple.

It grows to a large size with a spreading rounded crown. The bark is light grey, smooth in young trees, but later scaling off in rounded flakes.

Honey Dew

The flowers are similar to those of the field maple, but the sprays are longer and droop downwards. The large tive-lobed leaves have their margins cut into large irregular teeth. They are often covered with a sticky sweet substance called honey dew which attracts the ants. A sugary sap will also exude from the bark if it is cut. All maples have a sweet juice, and one variety, called the sugar maple, which grows in North America, is regularly tapped to procure maple syrup which is eaten like honey.

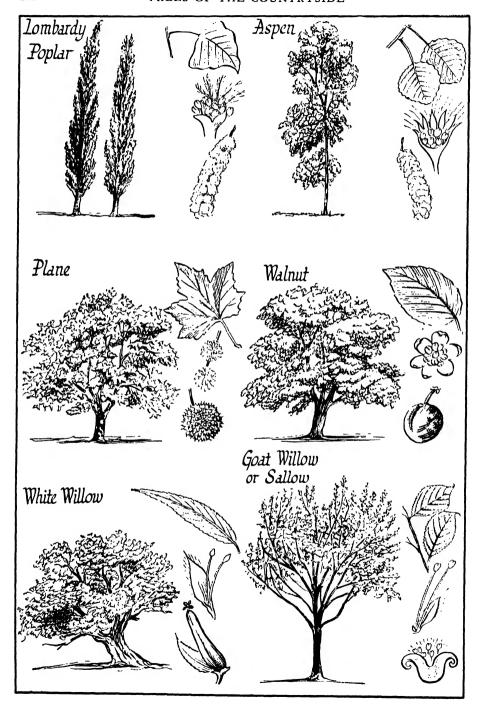
The fruits are the usual twin "keys." They turn a reddish tint in the autumn.

The great maple lacks the bright colouring of the field maple in the autumn, and its leaves turn a dingy brown and yellow, usually disfigured with large black spots caused by a disease to which they are very prone.

This tree prefers a loamy soil, not too moist, and will do well in exposed situations, even standing up to the saline air of the coast.

Poplar. To many people a poplar tree is merely the tall flame-shaped Lombardy poplar which was introduced from Italy about one hundred and fifty years ago. Actually, we have several native poplars, which, because they have not this peculiar shape, are not always recognized.

All poplars have certain characteristics in common. They like an open site and



moist soil and are usually to be found in low-lying country and along river banks. They are rapid growers and, as a result, their wood is soft and of no practical use. It will not even burn well.

The foliage is always rather scanty and the leaves have very long stems and give life and movement to the tree when slight breezes rustle through them. first appear they are a ruddy gold, but later are a dark green. In winter the buds are long and pointed and are sticky with resin.

The bark is a dark grey, and it is not clear why the tree is called black, unless it is in contrast to the white poplar.

White Poplar or Abele Tree. This tree can be at once distinguished by its



Willows on the banks of the Ouse at Hemingford Grey, Huntingdonshire.

The flowers are of separate sexes and grow on separate trees. The male flowers are in drooping red catkins, which come out early in the year before the leaves. The female flowers are little green capsules arranged along hanging stems. When ripe, they burst open and are seen to be full of white fluffy cotton to which the small seeds are attached.

The autumn colour of the leaves is a dull vellow.

Black Poplar. This is a native tree and is widely spread. The leaves are about three inches broad at the base and taper gradually to a point. The margins are cut into large flat teeth. When they

leaves, which have a thick coating of white down on the underside while their upper surfaces are a very dark glossy green. They vary considerably in shape and are sometimes roughly triangular and sometimes five-sided. The margins are uneven but have no teeth.

In winter the twigs and the small buds are also coated with the white down, which might easily be mistaken for a form of blight.

The tree reaches a larger size than the black poplar and the bark of old trees is very rugged. In young trees the bark is often marked with smooth black and white speckled patches.

The white poplar was well known to the ancients and was consecrated to Hercules according to Greek mythology.

Lombardy Poplar. This well-known tree needs no description as its tall flame-like shape must be familiar to everybody. The majority of Lombardy poplars in England are male trees, as this kind was the first to be introduced and the bulk of subsequent planting has been made by cuttings.

The leaves of this tree are smaller than those of the other poplars and are shaped rather like those of the black poplar.

An Interesting Fable

Aspen. This tree is known as the trembling poplar. Its leaves are the most tremulous of all because of the extreme length and slenderness of their stems. There used to be a superstition that the cross of Christ was made from the wood of an aspen and that, as the result, the tree has never been able to rest since. This is an interesting fable, but as the aspen is not found in the Judean mountains it is very ill founded.

The leaves are roughly rounded, pointed at the top, while the margins are toothed. They are often slightly downy underneath, but have never the thick white coating of the white poplar.

Although a small tree, the buds are much larger than those of the white poplar and this is an aid to identification in winter.

Plane. The two main species of plane are the oriental plane from southern Europe and the occidental plane from North America. There are not many points of difference between them. They both are large trees with a single straight trunk and spreading angular branches. The smooth grey bark is continually scaling off in large patches during the winter, revealing fresh pale bark underneath.

The leaves are large and palmate (shaped like a hand with five lobes or tingers), those of the oriental plane being the more deeply cut.

The flowers are of distinct sexes, both

growing on the same tree. Neither kind has petals, but are both in the form of round balls which hang in strings of two or three on a long stem. The balls of female flowers, which later contain the seeds, remain hanging on the tree all the winter. The plane retains its foliage till late in the year and assumes autumnal tints of brown and gold.

The planes that abound in the streets and squares of London are a variety called maple-leaved plane, said to be a cross between the two first-named species.

Willows. There are numerous different species and varieties of willow in England, but the differences between many of them are not very marked and only a few main kinds need be noted here. Most willows like a moist soil, the damper the better, and are usually to be found in water meadows or along river banks with their roots almost in the water.

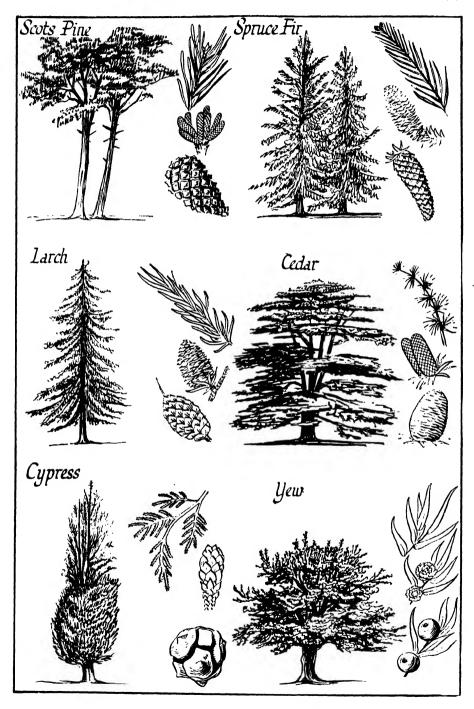
The male and female flowers grow on separate trees. The first signs of them are furry, silvery tufts breaking out of some of the buds in the spring. The male flowers become erect brushes of goldentipped stamens while the female flowers are erect green stems studded with numerous pointed green capsules. When ripe these capsules burst open, and a thick mass of white cotton protrudes, the small seeds each being attached to a cottony filament. When the tree is in full seed it looks as though it were dotted with little tutts of cotton-wool.

Willow for Bats

All willow branches are extremely tough and flexible and certain kinds are used for weaving baskets. The timber of the trunk is famous for cricket bats.

White Willow. This grows to a large tree with very rough bark. The leaves are about four inches long, narrow and pointed, with finely toothed margins. The undersides are coated with white silky down.

Crack Willow. This is also a large tree when fully grown. The leaves are about six inches long and have no white down



underneath. Although the twigs are tough and strong, they snap off very easily with a clean break where they join on to the branches.

Sallow or Goat Willow is usually found as a shrub in the hedgerow. It is unlike other willows in preferring a dry site. The leaves are not the typical long and narrow shape, but are more or less oval with a short curling point. The margins are toothed.

Pussy Willows

The flowers of the sallow come out very early in the spring, before the leaves, and it is the branches of this shrub, with its velvety opening flower buds, that is known to country people as "pussy willow." For some reason it is also known as "palm," and branches of it are often used to decorate churches on Palm Sunday.

Most willows rely on the wind to distribute their pollen, but the sallow flowers contain honey and are a great attraction to bees and flies, which assist in the process of fertilization.

Hazel. Mention of this shrub conjures up memories of the autumn and the exploration of the woodside for the sweet white nuts loved by all children.

The flowers of the hazel come out very early in the year and in January or February the twigs are adorned with the fluffy vellow tassels of male flowers, often called "lambs' tails." One or two of the small green buds on the twigs will be seen to have a number of bright red threads protruding from the tip; these are the female flowers.

The leaves of the hazel are large and broad, tapering to a sharp point. The surfaces are very rough and hairy and the margins are toothed.

Whitebeam. The word beam means tree, so the whitebeam must not be called the whitebeam tree. It likes a chalky soil and a sheltered spot. It is not very commonly met with, but is quite unmistakable.

The leaves, which are a regular pointed oval in shape with toothed margins, are covered with white down

which is especially thick on the underside of the leaf. The new shoots are also white with down.

The whitebeam is a member of the apple family and produces white flowers similar to apple blossom, but rather smaller. The truits are small red "apples" about half an inch in diameter, which, when ripe in September, are red with brown spots.

Conifers. Our only native conifers are the Scots pine and the yew, but many other species have been introduced and all have taken fairly well to our climate.

The chief characteristics of conifers are their liking for poor soils and cold situations, and their thin needle-like evergreen leaves. Also all except the yew produce fruits in the form of hard woody "cones." Most are valuable for their timber and large areas in England have been planted with them in recent years to make good the ravages on our trees for timber during the Great War.

The principal types of conifer found in England are the pines, the firs, the cedars and the cypresses, all of which have distinct characteristics.

Pines and Firs

The pines have long needle-like leaves growing from the twigs in little sheaths, each containing two or more needles. The firs have shorter and flatter leaves growing separately in rows along the twigs. The cedars have leaves like the pines, but much shorter, and growing in bunches of twenty or more from dwarf shoots on the old twigs, though on the new shoots they grow singly. The cypress leaves are very tiny and lie flat on the twigs which they completely clothe.

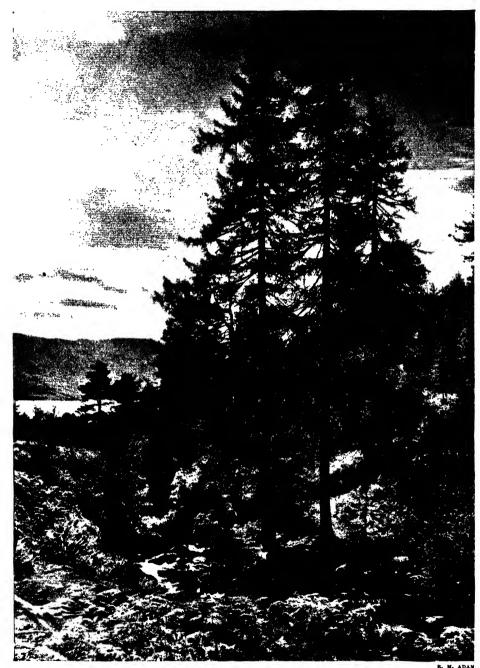
The cones of the pines take two years to ripen and have rough knobbly scales, while those of the firs are ripe by the first winter and have flat smooth scales.

Cedar cones are not cone-shaped at all, but are large and egg-shaped, sitting erect on the twigs. Cypress cones are rounded in shape, very knobbly and uneven, and smaller than pine cones. Some are not much bigger than peas,



BLACK AND WHITE STUDY

Pines in winter casting shadows across the sunlit snow.



HIGHLAND GLORY
Lofty larch trees by the shores of Loch Tay, Perthshire,

while other varieties have cones one inch or more in diameter. Yews, although classed as conifers, do not produce cones at all but have a succulent red berry as a fruit.

Scots Pine. This is our only native pine and is found growing all over the country in sandy soils, moors and rocky highlands. It has a tall straight trunk with a reddish bark. The lower branches tend to fall off and the upper branches straggle, giving the tree a flat-topped appearance. The foliage is grouped at the ends of the branches in flat plates. The needles are roughly about two inches long, sheathed in pairs, and are a dark bluish green.

Flower Pyramids

In the spring the female flowers appear at the ends of the new shoots in the form of small red ovoids, while at the same time erect pyramids of male flowers open out, laden with masses of yellow pollen. The female flowers, when fertilized, swell and droop, and at the end of the year are small green ovoids. It is not until the following year that they grow further and become full-sized cones.

Spruce Fir. This is the well-known "Christmas tree" and probably regrets the lack of the good old-fashioned Christmas weather, because it likes cold and snow and the temperate climate of England does not suit it very well.

The evergreen leaves are short and flat, arranged in a close spiral along the twigs. The male flowers are small pinky ovoids which droop and turn yellow as they ripen. The female flowers are in crect tufts of green scales, slightly tinged with pink. The cones are up to six inches long with flat smooth scales, and they always droop from the branches.

Silver Fir. This is not unlike the spruce, but can be distinguished by its leaves which are longer and which have two silver streaks on the underside so that the foliage has a whitish appearance when turned up.

The flowers are more or less similar to those of the spruce, but the large cones are always erect on the branches and do not hang down.

Larch. This is also a very graceful conifer with long drooping sprays of foliage. It has the peculiarity of being the only conifer to shed its leaves each year, and in the winter it looks very dead and dreary. In the spring, however, it sends out little tufts of the freshest pale green leaves which are in needle form.

Its flowers are distinctive. The male flowers are inconspicuous little buttons containing packed bunches of yellow stamens, while the female flowers are very pretty fleshy pink ovoids like small fruits. These change to green as they swell up and become woody and ripe the same autumn.

Cedar of Lebanon. The original home of this tree is in the mountains of Lebanon, Syria. Strangely enough, there are now probably more cedars in England than there are in the Lebanon mountains. Syria was largely deforested by the Turks and there now remains only one grove of the famous old cedars.

It is a favourite for the lawns of country houses as it is a magnificent looking tree. The trunk usually divides early into several upward spreading branches covered with great flat plates of impressive foliage. The lowest of the branches generally droop right down until they sweep the ground.

Male Catkins

The new shoots bearing fresh need'es push out in the early summer, but the tree is unusual in that it does not produce its flowers until the autumn. If one looks carefully at the branches in September, the male flowers, in the form of erect grey catkins, will be seen at the ends of old dwarf shoots. They later turn purple and by November are loose and covered with pollen. The female flowers also appear at this time, small inconspicuous ovoids which swell during the following year into large egg-shaped "cones," flattened at the top. It is two years before they are ripe, and the scales then open and fall off the cone one by one to release the seeds.

Yew. This gloomy-looking tree of sinister reputation rivals the oak in longevity, and the life of some hoary specimens is estimated to be nearly two thousand years.

While the leaves of the vew are undoubtedly poisonous to cattle, many of the evil qualities attributed to the tree are superstitions. The berries are not poisonous, as the birds eat them.

The yew grows very slowly, as befits

The flowers are of distinct sexes and grow on separate trees, which is unusual in conifers. The male flowers are small vellow balls growing among the leaves on the top side of the spray. The stamens produce an enormous quantity of pollen. The female flowers are small green pointed ovoids growing on the underside of the twigs. They turn into little green cups containing a hard nut. By the middle of August the cup has become



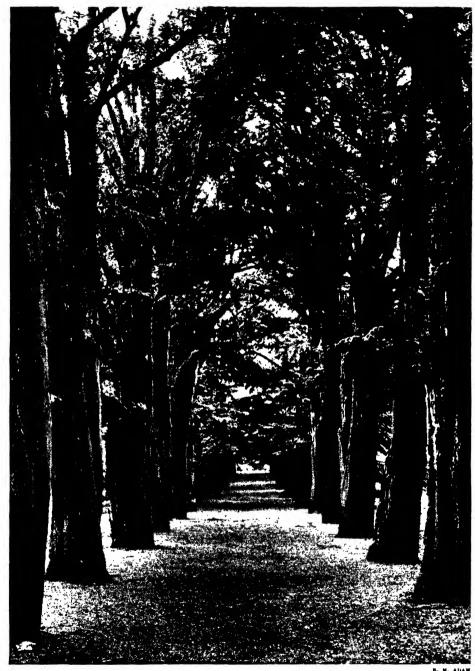
The hawthorn or may is common everywhere and its flowers provide one of the most fragrant scents of the countryside.

a tree that has possibly twenty centuries ahead of it. It never reaches a great height, but old trees have an immense girth and a wide spreading crown. The bark is smooth and grey and the trunk of old trees is generally heavily fluted as if many stems had joined themselves together to form this shape.

The dark shining evergreen leaves are set in close rows on opposite sides of the twigs. They are about an inch long and very narrow.

soft and juicy and a bright red in colour.

Many centuries ago the yew was famous as the tree which provided the wood for the bows of the renowned English archers. Its sole use now seems to be to provide a suitable atmosphere of solemnity in cemeteries and churchyards, together with the almost equally depressing-looking cypress. It also makes a good hedge as it will submit to much clipping and shaping.



A WOODLAND AISLE
A splendid avenue of yew trees at Murthly, Perthshire.



A small brown bird which is not house-proud, for it makes a badly-built nest in the reeds and the undergrowth in marshlands.

by NORMAN F. ELLISON

T is hardly possible to imagine the English countryside without its birds. All the year round they are with us, and even in the depth of winter, when all vegetation apparently is dead and not a flower is to be seen, you will still have their lively companionship on your tramp through leafless lanes and woods.

The busiest period of the bird's year is from April to June. Then, all bird life is at its peak, for courtship, nest building and family rearing is in full swing; their songs are gayer and plumage brighter

than at any other time.

I write this at my open window on a beautiful May morning. Outside, the variety of bird life that I can see charms me. It may be necessary to journey to the wilder parts of Britain to see the

rarer birds, but there still remain many to interest us right to hand.

" Stick-to-it, stick-to-it, go-it, go-it!" comes from the top of a holly tree in the garden. There is no mistaking the flute-like notes of the song thrush, one of our finest songsters, a handsome brown bird with a light breast marked with bold dark spots. It builds early, sometimes before the hedges have leaves to hide the large nest of dried grass and twigs. The inside is plastered with mud and rotten wood which the bird smooths into a perfect bowl with her breast. weatherproof home, sometimes too well made, for should a heavy shower come on whilst the thrush is away the lining holds the water, and the eggs become chilled or the youngsters drown. The five eggs are bright blue, spotted with black.

The lawn is being well dug over by a number of starlings,

whose black-speckled plumage shows a green and purple sheen in the sunlight. One of our most adaptable and successful birds, it is equally at home in a city street or on some cliff face. Any nesting hole which will hold the untidy collection of straw and other soft material will suit this bird. I know that one pair of these birds has a nest in a hole in a tree, whilst a recess under the roof houses another hungry brood. On a treeless island off the coast of Scotland I found them quite at home in disused rabbit burrows. The five eggs are a delicate pale blue.

The starling is a companionable bird to have about the house, although a noisy fellow. As a songster it is simply ludicrous. It perches on a chimney pot, flaps its wings and tunes up with a few



NIGHTINGALE

A cock nightingale inspects his offspring.



THE SONG THRUSH
A beautifully speckled bird with its nest of young ones,

whistled "phews." From its yellow beak there follows a curious metallic chattering and several wheezy notes, and then perhaps the cry of a lapwing. For the starling is a most capable mimic and should you hear the notes of the cuckoo long before the bird is due here from Africa, avoid being deceived by making very sure that they do not come from some starling.

The robin needs no introduction, for

a tenant. But the bird is jealous of the patch of territory which he and his mate have annexed as their own and fight off fiercely any other robin trespassing across its boundaries. The five eggs are a grey-white freekled with light brown.

Little needs to be said about the cheeky, pugnacious house-sparrow, except that our country birds are much cleaner than their town cousins, and it becomes possible to make out the black "bib"



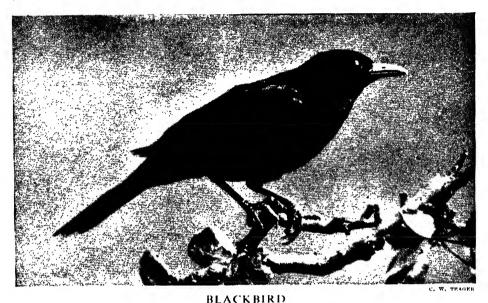
HEN CHAFFINCH AT NEST

RRIC HOSKING

The chaffinch usually builds its nest on the fork of a tree. It makes an attractive nest of moss and lichens and lines it with hair, wool and feathers.

it is one of the first birds we learn to love as children. One has just hopped on to the grass upon his absurdly fragile legs. The breast is very red and the beady black eyes very bright, for this particular bird is proud of the four nestlings which fill the nest it built in an empty tin box on a shelf in the potting shed. You will come across the nest in many places—in hedge banks, amongst ivy, in walls, and as the robin seems to like human society, any suitable tin can, flower pot or similar "hole" about the garden will often find

of the cock bird. Occasionally, there joins the squabbling crowd on the grass a shyer bird of similar appearance, but showing two distinct white bars on the wing. This is the tree-sparrow, a bird rarely seen in town and by no means common in the country. It builds a rough nest in any likely hole well above ground level. The eggs of both these sparrows have a greenish white background, marked with blotches, spots and dashes in greyish brown, but these markings are inconsistent and widely variable.



The bold-looking blackbird with its orange beak has a metallic warning note, but is also a melodious songster.

Whilst writing, I have been awaiting the appearance of a bird whose nest I found in a thick rhododendron bush. It has just flown past, a largish, jet-black bird with an orange beak--a cock blackbird. His mate is sitting on four eggs, blue-green, thickly spotted with brown. Her plumage is a shabby brown and the beak is dusky-coloured. Something has alarmed the cock bird, for as he flew he cried loudly a metallic "chink, chink," but his true song resembles that of the thrush. Indeed, some prefer it as being more mellow and with less repetition of the thrush's short notes. In general structure and position, the nest is like that of the thrush, except that the firm mud interior has a lining of fine grass. One other difference between the birds is worth noting. Whereas the thrush will sing to the whole world from his conspicuous vantage point, the blackbird prefers to hide in the centre of the tree or bush whilst carolling.

Will you come with me on a ramble down the lane, across the common, through the woods, along the river bank, and then back by the cliff path and the castle ruins? The morning sun has not yet swept the dew from the grass, so we may well spend a little while outside in the garden.

Above the porch, the house-martins have affixed their cup-shaped mud nest directly under the projecting eaves of the roof. Their task is only just completed and for some days I have been watching them carrying up pellets of mud and dabbing them on one at a time. The building is done in small patches, each daily addition being allowed to dry out before the next is added. Ordinary mud alone would dry, crack and crumble, but the martin binds it with grass and hair and then mixes it with its own saliva into a perfect, hard-wearing cement.

Cosy Homes

Very soon, if the covetous sparrows do not drive away the builders, the nest will be filled with feathers and five oval white eggs will lie in one of the cosiest homes imaginable. The house-martin may be distinguished from the swallow by the shallower fork in the tail, and when flying by the noticeable white rump.

Another bird, the swift, finds lodging under my roof too, but farther in under the slates. It is well named, for few British birds can fly at greater speed. Its appearance is black with long scimitarshaped wings which just hurl it through the air-its true home. The bird never alights on the ground, for it has great difficulty in rising again. What little rest it takes in the twenty-four hours is enjoyed in the nesting hole or clinging to the face of the house wall. You will find three long white eggs in a rough nest of hay and feathers glued together with the bird's saliva. On any fine night in summer the village echoes to the piercing screams "swee-ree-ree" of a company of swifts rushing together through the air about the roofs and the church steeple.

Close to the house we have nesting the third member of that madeap aerial circus—the swallow. For many years there have been two nests on one of the roof beams in the old stable. It is an open nest of mud pellets mixed with hay and straw. On the lining feathers you will notice four, maybe six, delicate white eggs with reddish markings. Look again at that pair of swallows twittering to each other on the ridge of the stable roof. The bright chestnut forehead and throat and the rich metallic blue of head and back are obvious. One has flown off, rising and swooping in long graceful curves and showing plainly surest clues to identity - the two outer tail-feathers prolonged into streamers.

Swift, swallow and house-martin migrate to this country in April from Africa—some from as far south as Natal and Cape Colony-and stay with us until early autumn. Other birds have finer plumage and sweeter song, but in the air these are the incomparable three graces.

Behind the outbuildings grow two gnarled apple trees. Grey lichens roughly encrust the branches and provide a



SWALLOW AT NEST

The swallow makes its home on the rafters of barns and other buildings, and builds a nest of mud mixed with hay and straw and lined with feathers.

happy hunting ground for chaffinch and blue tit. In one tree, where a branch forks with the trunk, the chatfinch has fashioned its nest. It is small, round, and compact—a creation of exquisite beauty. Green mosses and coloured lichens are bound together with cobwebs and the inside lined with soft hair, wool, and feathers. The five eggs are grev with a peculiar winy-red tinge and carry bold brown spots which might well have been burned-in with a red-hot poker. I recollect one unusual but artistic nest in a churchyard yew, which the bird had decorated with coloured confetti. The male is one of our handsomest finches. His front is rosy red, head and neck blue-grey, whilst there is a conspicuous white shoulder patch and a white bar across the wing. He has a pleasing song of a number of short notes, but you cannot fail to pick him out by his oftrepeated "pink, pink." The dress of his mate is a duller brown and the wing bars are not so pure. You will find the chaffinch widely distributed, very tame, and one of the most frequent visitors to your bird table.

As we admired this nest, our eye was held by the antics of a small bird with a vellow waistcoat and a blue-crowned head. A restless bird, never still for two moments, hanging upside down and poking into every crevice of the bark for insects, or taking short flights from branch to branch—but never still. It is a blue tit—a bird with the most amusing acrobatic tricks, as you will discover if you hang out half a coconut in your garden next winter. It will build in any suitable hole-preferably one with an entrance just large enough to admit its small body. This bird has a nest in the hollow iron post of my garden gate. When I tap it gently, I hear the squeaking of the young birds safe and warm inside. The tiny eggs are white, speckled with

Another member of the tit family which chooses curious nesting places is the great tit. It has a yellow waistcoat, too, divided by the black patch which



A LARGE FAMILY

A pair of long-tailed tits with a brood of six young ones hatched in an elaborately built, cosy, feather-lined nest.



BLUE TIT
Springtime study of the dainty blue tit on a branch of may blossom.

extends down from its throat. The head is black, and the bird is nearly twice the size of the blue tit. The call note might be written "teacher, teacher," but it always reminds me of a saw going through wood. The great tit is a bully, and no bird for the aviary, for it will kill and pick out the brains of smaller birds. Eggs—white with red markings, but larger than those of the other tits.

By this time, the sun is well up in the heavens, so let us away on our ramble.

Looking for Nests

The lane is bounded by tall banks on either side, surmounted by a thick hedge of hawthorn and hazel. Along the base, a profuse growth of tall grass and other vegetation provides ideal cover for small birds and animals. Keep your eye on the bank well ahead for any bird you may notice quietly slipping out when alarmed at our approach. There's one! Hold the exact spot with your eye and walk straight to it.

We quickly discover the nest, which completely fills a small hole in the bank. It is domed with an entrance at the side, and is made of dead leaves and grass with a lining of feathers. Inside are six small white eggs spotted with red. They might belong to either chiff-chaff or willow warbler, and as it is only practicable to tell one bird from the other by very close examination, we must rely upon the two songs as our clues. Nearly always from the top of a tall tree, the chiff-chaff utters his two notes, "chiffchaff, chiff-chaff," with monotonous persistence, but the simple, sweet voice of the willow warbler runs up the scale and then, as if the bird had not sufficient breath to finish the cadence, the song falls, becomes softer and dies away. Both birds are greenish yellow, lighter underneath, but the chiff-chaff has blackish legs and feet, the willow warbler brown.

A few yards down the lane, another bird leaves the hedge under our noses. Brown streaked with a darker brown is

its general sparrow-like appearance, but the steel-grey throat and chest belong to the hedge accentor. Hedge-sparrow it is often called, but wrongly, for it is not even a member of the sparrow family. The hair-lined nest of moss and twigs is easily seen in the hedge, and it contains five bright blue eggs. This lane is the nesting ground of another common hedgerow bird, the yellow-hammer. There is one, on the topmost twig of that hazel tree, lustily singing a refrain



THE GREAT TIT

This bird with a black head and throat and yellow waistcoat is a cruel fighter.

which sounds just like "a-little-bit-of-bread-and-no-che-ee-se." The bright lemon head and throat make this our handsomest bunting. Look well down in the hedge for the nest. There are three ashy-white eggs in it, curiously marked with dark purple as if a child with a copying pencil had scribbled all over them. This gives the bird the name so common in many parts of the country, "scribbling lark."

As we examined these delightful eggs, a flock of rooks flew low overhead, cawing noisily. No doubt they were bound for the tall elm trees in the

vicarage garden where, for many years, they have established their rookery. As they commence to lay in early March, there will be fully fledged young birds about those large untidy nests of sticks. The man-in-the-street often confuses the rook with the crow, vet the differences are most marked. Carrion crows prefer unfrequented country, and generally nest and hunt in pairs. The beak is stouter than that of the rook and feathered right to the base, whereas the white bare patch at the base of the rook's beak is most pronounced. To discover the raven, largest and most sagacious of the clever crow family, we should have to explore the wilder parts of the country. It is a magnificent bird on the wing, half as large again as the crow, with a rich purple gloss on its deep black plumage. The hoarse croaking note, pruk, pruk," is a sure guide. The nest is an accumulation of sticks and roots added to year by year and usually placed on a ledge down the face of a precipitous cliff. Five large, handsome eggs, light green heavily blotched with green, lie snug in a small wool-lined hollow on the top of this pile. The bird is gradually being driven out of its old strongholds into the more solitary places.

Ground Nesting Birds

I have found the nests of both pheasant and partiidge down this lane, but on the field side of the hedge. In neither instance is it much of a nest; simply a flat structure of dead leaves and grass on the ground, well hidden in the hedge bottom. The eggs of both birds are very similar in their olive-brown colour, but those of the partridge are much the smaller. Like many ground nesting birds, which have a host of enemies, a very full nest of eggs is laid. Twelve or so is a good average clutch. Only the hen birds sit, and their variegated plumage of brown and black blends so well into the surroundings, that if the birds remain still, the casual glance misses them. Both pheasant and partridge are so familiar in any poulterer's shop that description is hardly necessary.



CHIFF-CHAFF
The industrious parent comes home with food for its apparently indifferent offspring.

When flushed, the flight of the partridge is easily recognizable. With a loud whirring of wings, the bird rises, gains momentum and disappears on a long glide with immovable down-bent wings.

"Crake crake, crake" comes from the field of long grass bordering the lane. A harsh, grating sound (you can imitate it perfectly by drawing a piece of wood across a comb) which persists for hours on end and often right through the night. It is a corncrake, a bird often heard but very seldom seen. Towards the end of April it arrives in this country from its winter quarters in Egypt and Asia Minor. Although a powerful flier, it rarely takes to the wing when it has landed here, but skulks under cover of the long grass and standing corn. The bird often utters its cry whilst swiftly running, and this conveys a ventriloquial effect to the listener. The nest is little more than a pad of dead grass on the ground hidden in nettles or tall herbage. There may be ten eggs or more, buffish

white in colour, spotted with rusty brown.

Presently we turn off the lane, through a gate on to the common. Scattered clumps of gorse line the rough cart track to the woods. High above us, a lark hangs on fluttering wings and pours out its liquid melody. Then, still singing, it slowly volplanes down to the ground in a long spiral. The footprint of a cow or similar indentation will hold its simple nest and dark brown speckled eggs. The skylark always seems to me one of our happiest birds, for even in the drear days of winter its lovely song will delight you. Some distance away, a larger bird hovers stationary in the air, wings fanning rapidly and long tail depressed and outspread. It is a kestrel, one of our smaller birds of prey, hunting tor a meal. Suddenly it drops to earth and picks up some small mammal or beetle, or seeing nothing beneath, slips sideways to another part of the common. It makes no nest but will use the old home of magpie or crow, or will scratch



THE RAVEN

This large, glossy black bird with a hoarse cry, builds its nest of sticks on the ledge of a crag or on the face of a disused quarry,



YELLOW-HAMMER

This bird may be recognized by its bright yellow head and throat. Its eggs have curious markings and on this account it is also known as the "writing bird" or "scribbling lark."

out a hollow on a cliff ledge. Only too often the kestrel is persecuted by ignorant gamekeepers, but the quantity of rats and mice it kills warrants its full protection.

There are other birds wheeling, swooping and tumbling above the common, calling a plaintive "pee-wit, pee-wit." These plovers or lapwings are early nesters, and the young birds will long have left the shallow scrape on the open ground where they were hatched out.

In Furze Thicket

In the gorse bushes we may expect to find the neat hair-lined home of the linnet, one of our commonest finches. The five eggs are bluish white spotted with reddish brown. In the breeding season, the rather sober brown plumage of the cock is enlivened by the rich crimson of forchead and breast. Whilst hunting amongst these furze thickets, we may be fortunate to see the most

beautiful nest built by any bird in the British Isles, that of the longtailed tit. It is large, upright, oval shaped with a small entrance hole near the top. Woodland moss bound together with spiders' webs and profusely decorated with grey lichen make up an exquisite creation. There may be as many as twelve eggs, white with red speckles, resting on a bed of literally hundreds of small teathers. How a six-inch bird and a large family manage to pack themselves into such a small space is a mystery which the bird alone can solve. This is the most engaging and sociable of all the tit family, and may be easily recognized by the very long tail and the general impression of a black and white bird with a lot of pink about it.

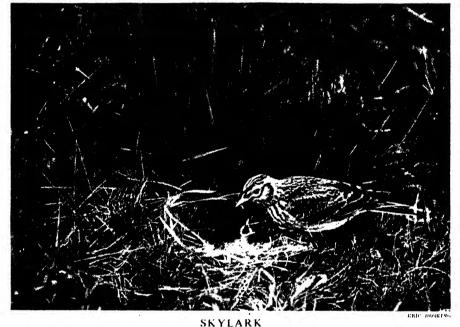
Nearing the wood we note a small heap of teathers on the ground—a sure sign that a sparrow-hawk is hunting in the neighbourhood. No doubt the large, shallow nest of twigs is in one of the tall pine trees in the wood. This



BIRD OF PREY
A kestrel hawk with its catch. This bird is also known as "wind-hover."

bird differs both in appearance and habits from the kestrel, so that no confusion need arise in your identification. The buff underparts closely barred with brown of the sparrow-hawk, the short rounded wings and longish tail, the rapid flight and its habit of keeping under cover, are all sure pointers. A favourite hunting trick is to glide quickly down one side of a hedge,

possible to see the two white egg through the nest. Another sound come to us, not unlike the distant rattle of machine-gun. Quietly we track it dowr and see a black and white bird with crimson on head and underparts, clinging to the face of a tree. It is a great spotter woodpecker. Its beak taps the wood very rapidly, "drumming" out a love challenge. The bird sees us and flies of



The skylark, which sings so merrily on high, makes its nest on the ground and there hatches its dark-brown speckled eggs.

suddenly dodge over the top and dash amongst a flock of small birds on the other side. The element of surprise is complete, and rarely does the hawk fail to seize a victim. It is not so common as the kestrel and like that bird, is more of a friend than a foc to the farmer.

At length we leave the sunlight for the shade of the wood. The soft "cooing" of wood pigeons breaks the silence. The nest is a shallow platform of twigs on the matted branch of a spruce fir just above us. The material is so loosely put together that, standing below, it is

with a shril! "whit, whit." The lesser spotted woodpecker is like it in appearance and habits, but is only half the size, whilst the third member of this family the green woodpecker, also haunts the woods. The latter is the largest and handsomest, indeed its bright crimson crown and green plumage place it among our most beautiful British birds. The undulating flight and laughter-like "haha-ha" are helps to identify it.

All these woodpeckers nest at the bottom of a hole which they dig out in some rotten tree, the glossy white eggs

resting on a bed of small wood chips.

As we walk through the wood, quiet and observant, our eye is arrested by a small brown mouse running up a tree in short jerks. A second glance and we see that it is no mouse but a bird. It is a treecreeper, a silent and unobtrusive bird which passes its life seeking insects and larvæ in the crevices and under the bark of trees. Note the stiff pointed tailfeathers pressed against the trunk to help the bird to climb. The nest is generally wedged behind a loose piece of bark or in a hole in the tree. When the treecreeper has reached the top of the tree, it flies obliquely down to the base of the next one and begins to ascend again.

Arboreal Acrobat

This habit marks it out from another tree-climbing bird—the nuthatch. This is the supreme arboreal acrobat, for it runs up and down, sideways or head downwards with equal facility. Before you actually see it, you will frequently

hear its strong beak hammering at some nut it has inserted in a crack. There is no mistaking the bird. Bluish-grey back, pinkish-buff underparts and an obvious black streak running backwards through the eye. The nest is always in a hole—usually in a tree, but I have found them in walls—and unique among British birds, the nuthatch plasters up the entrance with mud until sufficient room only is left for it to enter. Both tree-creeper and nuthatch are far commoner than generally supposed, but they have to be carefully looked for.

We leave the wood with the mocking laughter notes of the jay in our ears. The bird is more often heard than seen, for it is wary and cunning, but the black and white short crest, the pinkish-brown back and breast and the bright blue feathers barred with black, very conspicuous on the wing, pick out the bird at once. Neither eggs nor nestlings are safe when this inveterate robber is about. Beyond the wood, the ground rises

SPARROW-HAWK AND YOUNG

A fierce hunter with a strong beak and cruel claws, the sparrow-hawk preys on other birds and is not afraid to attack those larger than itself.



This bird, also known as the peewit in imitation of its plaintive cry, makes a shallow scoop on the ground for its nest. Note the curious tuft of feathers on its head.

gradually to heather-clad moorland. We note several birds in the air, and their wild, weird cries, "cour-lee, cour-lee," come to us distinctly. It is a big bird—see, there is one on the ground close to us—with a conspicuous long curved beak and legs. There is no mistaking the curlew, typical bird of the moors in spring and summer. In the winter it flocks to the coastal mud flats to feed on the titbits left by the ebbing tide.

Another moorland bird, which we may see in the northern parts of the country, is the merlin smallest of our birds of prey. Its size is that of the mistle-thrush, and it has dull white underparts streaked with brown, which should identify it at once. It is the most fearless and dashing of all our falcons and, if necessary, will not hesitate to attack any bird larger than itself. In those far-off days when falconry was the sport of kings, the merlin was known as the "lady's hawk," and was flown at larks, thrushes and birds of that size.

The nest is only a scrape on the ground under the shelter of some clump of heather. The male bird—as is the case with all the hawks—is smaller than his mate and may often be seen mounting guard on some prominent rock near to the nest, hence the common name of "stone falcon."

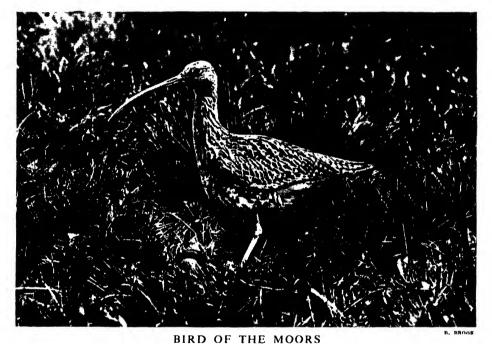
Our path to the river leads downhill. From a high straggling thorn hedge on our left, a magpie flies out. The black and white plumage, long tail and jerky undulating flight strike us at once. We walk over to view the nest, a bulky structure of sticks arched over and with a circular entrance hole at the side. The youngsters are nearly fledged, for like most members of the crow family, the magpie nests early in the year. Meanwhile, the parents chatter angrily at us from a nearby perch, so we leave them in peace. Midway down the hill there is an old sand pit, long disused and overgrown with vegetation. In the steep sandy face, there are at least thirty



THE LESSER SPOTTED WOODPECKER
Like the great spotted woodpecker and the green woodpecker, this bird nests in a hole in a tree.

round holes, in and out of which a number of sand-martins are flying. A smaller edition of the house-martin, but without the white rump, it is an energetic bird. The holes may go straight into the bank for nearly four feet. This tunnelling is done by the short beaks of the birds. A simple nest of straw and feathers is made at the far end, and the pointed white eggs laid there. After

creepers, we found the nest, a domed ball of moss and dead leaves with an entrance hole at the side. The wren will build in almost any nook or cranny where the nest can be safely tucked away. Once I came across one in the open coat pocket of a scarecrow leaning against a shed. For its size, the wren has an amazingly loud song; it seems incredible that such a volume of sound



The curlew frequents the moors in spring and summer and wheels overhead with a long drawn-out wailing cry.

wintering in Africa, the sand-martin returns year after year to the same colony. There is no happier sight than the entrance holes to a dozen nests crammed with young martins waiting to be fed.

As we sat watching the martins, a brown, moth-like bird flew past with rapid whirr of short wings to a spot beneath the overhanging creeper-draped bank. It was a wren, a little plump brown body with perky upturned tail (you will see its portrait on the new issue of farthings). Hidden away under the

could come from so small a throat.

At the bottom of the hill stretch the placid broad waters of the mere. The margin is choked with reeds and rushes amongst which the coots and moorhens nest freely. The saying, "As bald as a coot," has its origin in the distinctive white patch on the coot's forehead. The bird is blackish with a thin white bar across the wing. No confusion need arise with the smaller moorhen, which shows a coral-red beak tipped with yellow, and swims with a peculiar bobbing action, frequently showing a

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flick of white under the tail. Both birds build large open nests of aquatic vegetation in or near the water's edge, but the eggs differ greatly. The coot's larger eggs—a dirty stone colour spotted with black—are unlike those of any other British bird, whilst those of the moorhen are reddish, blotched with orange brown.

In April, the blackheaded gulls come from their seashore haunts to the shallower end of the mere, where among the marshy clumps of sedge they nest in a colony. The black head, red beak, legs and feet are distinctive, although after the breeding season the black cap gradually disappears until only a small dark spot behind the eye remains. Close to this gull colony, a pair of mute swans have a nest. It is a very large mound of rushes and reeds, with the pale green eggs-the largest of any British bird-in a scantily lined hollow on the top. Both sexes take turn about in sitting, the one on sentry duty attacking

fiercely any living thing which approaches too near. The bird is not entirely mute, for on occasion it utters a loud trumpetlike note or when angry hisses in a most menacing manner.

The overflow of the mere descends by a rippling stream through a wellwooded dingle to the broad volume of the river. There is always an abundant bird life in this sheltered spot. The clear-cut black and white plumage of two pied wagtails catches the eye, and from the constant up-and-down movement of the tail, we understand why the bird is so named. They walk about from stone to stone picking up aquatic larvæ or fly up into the air for a few feet after insects. With them are several grey wagtails, similar in build and habits, but with slate-grey head and back, and bright yellow underparts. Note particularly the black chin and throat, for this is the chief distinction from the yellow wagtail-a summer visitor from



MISTLE-THRUSH

This bird with a lovely speckled breast likes to swing on a bough and pipe its merry song.

Another name for it is "stormcock."

Africa and not so well distributed as the other two kinds.

The clegant wagtail family nest in holes in banks, walls or tree roots and never very far from the water.

On a rock in midstream there is a plumpish bird bobbing and curtsying in delightful fashion. The naturalist Hudson described it perfectly as "a big, black wren with a silvery white bib." It is a dipper. Let us keep very still and quiet to watch it. Presently the bird walks down the shelving stone into the water like a bather entering the sea. Deeper and deeper until it is submerged completely. Hanging on to the bottom to prevent its bobbing up to the surface, it walks about the bed of the stream looking for insects and larvæ. From above I have watched the bird under water, and a curious but pretty picture it presents. In the running water its shape appears to alter every moment, whilst the air bubbles entangled in its feathers spangle the bird with

silvery pearls. The nest is usually in a hole under a bridge or shelf of rock and is a large domed collection of moss with the entrance hole well underneath. Dippers divide a stream into "beats," and one pair will not willingly encroach upon the territory of the next pair.

Stork-like Heron

Where this stream actually enters the river, a projecting delta has been formed of the material brought down. At the end of this spit there stands motionless and erect on its stilt-like legs, a heron. The bird might well be a stork transplanted from any Japanese painting, and is unmistakable. Slate-grey is the prevailing colour of its plumage, with a thin but long black crest curling half down the long neck. The yellowish beak is like a pointed dagger, a deadly weapon against fish, frog or water rat. Once again we will hide and watch.



YOUNG MAGPIE
Its contrasting black and white feathers and very long tail make the magpie easily recognizable.

For minutes on end not a movement. and then--piff! the sinuous neck has uncoiled and shot out like lightning. In the beak is a small eel. The heron takes a few steps, and beats the wriggling fish on a stone until it is dead. It is tossed in the air once or twice, caught head first and, with a gulp, swallowed. This truly majestic bird nests in small colonies in the tops of very tall trees. The large nest of sticks and twigs will hold three or four dull greenish-blue In the almost treeless Orkney cggs. Isles, I have seen as many as a dozen nests on the precipitous face of a sea cliff nearly three hundred feet in height. They had nested there for many years. From the cliff top, one could look down on the nests and plainly discern the eggs and, in some cases, the young birds too.

We continue along the bank with the downward current of the river. There

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has been a recent hatch of May-fly or gnat and the surface is dappled with the rings of rising trout. The sand-martins are skimming the water too, and taking the fly on the wing.

Suddenly there flashes past, on short rapidly beating wings, a bird with powerful beak and stumpy tail. But the brilliant blue of the back and the orangered underparts caught and held our The bird has the limitless patience of the true fisherman. It will perch on a branch overlooking the stream and wait until a minnow or other small fish appears. A quick dive, a splash and the kingfisher is back on its perch with the fish in its beak. It beats the life out of it against the branch and swallows it head first.

As we ramble on there comes the



THE DIPPER

LRIC HOSKING

This black bird with a white breast lives by the sides of streams and rivers, and builds its nest of moss beneath a bridge or overhanging rock, or even behind a waterfall.

glance, for this was a kingfisher, undoubtedly the most gorgeously coloured bird we have. It is a somewhat shy bird and not common anywhere, but it unmolested it will often nest very near to towns. I know one large northern city where kingfishers have nested for years in a large public park well surrounded by houses.

The nest—if so we may term the litter of fish bones upon which the round white eggs are placed—is at the end of a short hole in a bank, or occasionally in a hole in a wall, but always near water.

familiar call of the cuckoo. So much might be written about the cuckoo—several books have been—and our space is so limited, but it is one of those birds which everyone knows by ear but few by sight. Its flight is rather hawk-like, indeed the long wings and tail and the black barring across the breast and underparts, add to the resemblance. On several occasions I have seen it mobbed by an excited crowd of small birds which, I am convinced, took it for a hawk. This is the only British bird which does not rear its own young. The temale



A BURROWING BIRD

ERIC HORKING

Sand-martins build their nests at the ends of tunnels which they excavate in sandbanks and which may be as much as four feet long.



MOORHEN AT NEST

ERIC HOSKIN

Among the reeds at the edge of a pond or quiet stream may be found the moorhen's nest, containing reddish-coloured eggs with orange-brown markings.



A crude nest on the ground lined with a little dried grass serves the sandpiper, a summer visitor which may be seen along the banks of streams.



COMMON WHITETHROAT

A cheerful bird which, though not gifted with song, may be heard warbling, sometimes excitedly, along the hedgerows.

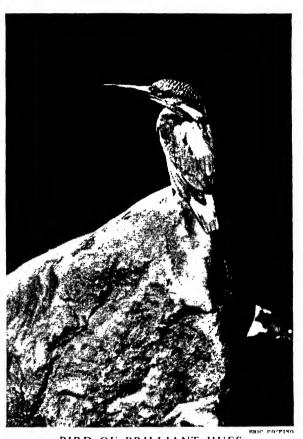
deposits her egg in the nest of the chosen foster-parent. Meadow pipit, hedge accentor, robin, pied wagtail, sedge warbler are some of the hundred species more freely imposed upon. The egg hatches in about fourteen days. The blind and naked nestling then proceeds to empty the nest of eggs or

other nestlings by manœuvring them into the hollow of its back and tipping them out of the nest. The fosterparents ignore their evicted offspring and devote all their energies to feeding the greedy usurper, so much larger than themselves. In July, the adult cuckoos leave for Africa and Persia, the young following them later. How the youngsters who, of course, have never been out of England, find their way alone and without adult guidance, is one of the unsolved mysteries of bird migration.

We leave the cuckoo, perched on a fence post, to his monotonous calling. Presently the river widens out and runs on either side of a small island of sun-bleached stones. A few clumps of coarse grass provide the only cover on it, for the floods of winter sweep over it for weeks on end. Among the stones a bird moves, a brownish bird with white underparts, a long pointed bill and the thin legs of a typical wader. Then we note that although the bird is stationary, the rear of its body is moving up and down in somewhat similar fashion to the "wag-

ging" of the wagtails. It sees us and flies off. The flight is characteristic too. First a rapid beat of wings and then a glide close to the surface of the water, showing across the open crescent-shaped wings a conspicuous white bar. The cry, as it flies off, is a

continuous "weet, weet, weet" a sound which always reminds me of the turning of an ungreased wheel axle. That bird was a sandpiper, a graceful summer visitor from sometimes as far away as Tasmania. The nest we should find in a scrape among the smaller stones on the island. It is a poor attempt at a nest and



BIRD OF BRILLIANT HUES

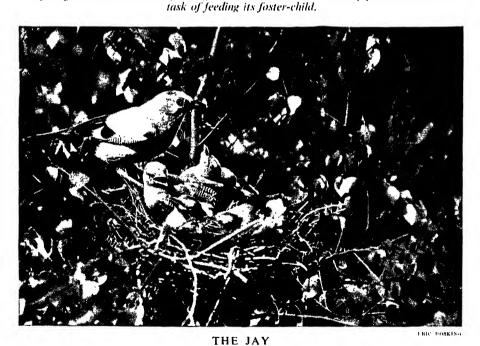
One of our most brightly coloured birds is the kingfisher. It haunts the streams in search of fish and sometimes may be seen flying swiftly like a flash of blue and red.

> might be lined with a little dried grass. Now it is time to end our ramble, so we turn homewards from the river and climb the path that leads past the ruins of the castle. Thick ivy has hidden most of the stonework and gives splendid cover for the nests of many jackdaws in



A GREEDY YOUNGSTER

The young cuckoo is an outrageous glutton. Here is seen a tree pipit at the thankless



A handsome bird of the woods with brown body, black tail, and black and white wings and a beautiful blue wing patch with black bars.

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the walls behind. With the exception of the grey head and neck, the jackdaw is almost a smaller edition of the rook, with which it will fly and feed. The eye too, is a light grey and adds to the cheeky, jaunty air of the bird. It will eat anything from peas, to eggs and young birds. The jackdaw is on the increase, and as it drives away more useful birds is, in some places, regarded as a pest.

These ruins are also the haunt of a pair of barn owls. If we return in late afternoon towards dusk, we should see them on the wing hunting for rats, mice and other small game. Like all the owl family, the flight is silent. In the darkness the plumage appears to be white, but actually the upper parts are a pale orange-brown and the underparts only are whitish. The peculiar heartshaped white face identifies it at once. We call it here the screech owl, and in the darkness its wild screaming cry is an eeric sound.

The eggs are laid in a suitable hole and the remains of previous meals and pellets of undigestible matter cast up by the bird, appear to be the only nesting materials. Owls do not lay their three or four round white eggs within a few days of each other, as do most birds, but allow a period to elapse between each, so that usually one finds both eggs and partly fledged nestlings in the same nest. All should be encouraged, for the toll they take of the smaller vermin entitles them to be reckoned among the friends of man.

Our path leads us past a spinney of oak trees. At our approach, a bird flies up from the dense undergrowth and perches on a branch overhead. In general appearance it resembles a robin except that the throat and breast are greyish white. It is a nightingale. After a diligent search we find the nest well concealed in the undergrowth and near to the ground. It is a deep cupshaped affair, constructed of grass and many oak leaves. The lining is of fine grass and hair, and it contains six deep olive-brown eggs.

Although the nightingale sings freely

throughout the day time, we shall have to return tonight about eleven o'clock to hear it in full voice. Then, with no opposition chorus to dim its wonderfully rich and varied song, we shall enjoy its deep flute-like notes, its plaintive pipes and trills -how impossible to describe that incomparable song in words and come to understand why it is one of the finest of British songsters.

The nightingale, of course, gains something of its reputation by its nocturnal habits. In the night it has the field to itself with no rivals or other distracting sounds to divide our attention. Added to

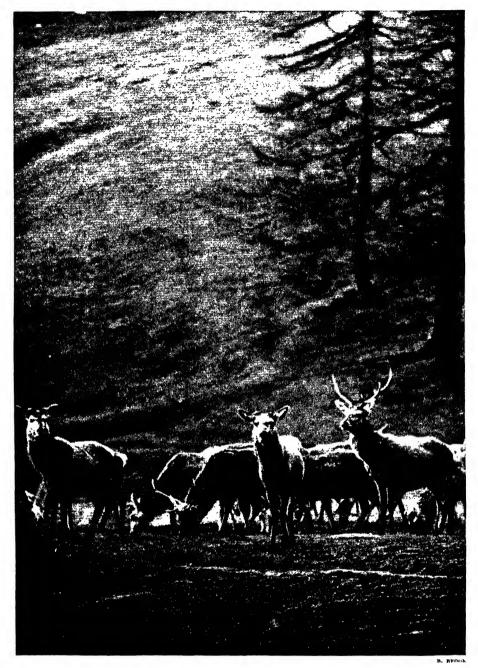


A DAINTY BIRD

This attractive little bird is popularly known as the hedge-sparrow but it is not a sparrow, its correct name being the hedge accentor.

that is the dramatic effect of sweet music issuing from the surrounding darkness.

Here we are back at home and ready for the hot tea awaiting us. We have had just an average ramble, yet during our outing we have seen and identified more than fitty birds. That is a good foundation for starting a hobby which many have found to be the most tascinating one possible—bird watching.



A HERD OF RED DEER IN A HIGHLAND GLEN

These monarchs of mountain, moorland and glen are still to be found roaming wild, in

Scotland, in the Lake District, and on Exmoor.

WILD ANIMALS OF THE COUNTRYSIDE

by FRANCES PITT

The fox is probably the best known of the larger wild animals of our woods and fields, but among the smaller ones the rabbit is widespread and familiar to all. There are few more charming sights than the rabbits hopping

forth in the twilight of a summer evening to scamper about, race and chase one another, and nibble at the turf. They hop to and fro, pause, sit up and wash their faces with quick, cat-like gestures. Then they resume their games or busy nibbling, for rabbits have great appetites and like to be continually gnawing at something or other, for which reason they are unpopular with the They do farmer. much damage to his crops and give him good cause to dislike them.

But before going on to consider the

details of the rabbit's life story, let us turn to an animal that is as seldom seen as the rabbit is commonly on view, but which, nevertheless, is one of our most interesting mammals. I am referring to that shy creature of the night, the badger.

Brock, to use the name by which the badger was known in days of old, is by no means scarce; indeed, it is well distributed over many parts of England, Wales and the lowlands of Scotland, but it rarely, very rarely, leaves home before night has fallen, and even then is so shy and cautious that it is seldom seen. It

takes care to be back in its great burrow, known as the "sett," before sunrise.

The badger is a thick-set animal on short legs, and its paws are armed with strong claws, which are excellent for digging and scratching, and are the means by which it excavates its long tunnels. These shafts stretch far underground and a badger's sett is often an amazing labyrinth of holes.

In its rough grey jacket, and with its black and white striped face, the badger looks a ponderous, rather surly beast, but in reality it is a cheer-

ful light-hearted creature. I had a tame badger called Diana, and she delighted in romping with the dogs. She liked playing practical jokes upon them. She raced round and round with them, her hair erect with excitement, and it she could catch the old retriever unexpectedly she would charge him, catch him "amidships" and knock him head over heels.



YOUNG MOUNTAIN HARES
Also known as the Scottish hare and the
blue hare to distinguish it from the common
brown hare, this species usually turns white
in the winter months.



B. BROOM

A CUNNING BEAST

Of all creatures of the night the fox is undoubtedly the stealthiest. Here is a young cub alarmed by the photographer's flashlight.

The peace-loving old dog could never resign himself to this rough treatment, but the badger always seemed particularly pleased with herself after playing pranks upon him.

The badger, as I have said, is a creature of the night, and under cover of darkness roams far across the countryside in search of the things it loves, such as wasps' nests, grubs and slugs, frogs, and other small things. It will dig out and destroy any families of young rabbits that it sniffs as they lie in their underground nests, for it has an acute nose and hunts chiefly by the sense of smell, but wasps' nests are its delight. A badger has a thick skin well covered with hair and is indifferent to the stings of the wasps. In vain do they buzz angrily round it. The badger scratches and scrapes, digs on and gets out the last bit of the nest, when it licks its lips and goes off to look for another. Yet, however good its hunting may have been, home it goes at the first hint of coming day.

This animal is not only a great homelover, but a good housekeeper, and makes itself a comfortable couch of leaves, grass and fern, at the end of one of its long tunnels. When the bed gets dirty and messy it clears it away, scrapes it to the mouth of the hole and throws it out, after which it brings in fresh material.

Badger Spring Cleans

A female badger, getting her house ready for cubs, has a great spring cleaning, so that the cubs, usually three in number, are born in a beautifully kept burrow. Here they stay for some time and only venture forth when big and strong.

The badger, by the way, belongs to the Mustelidae, that is to say, it is a relative of the stoats and weasels, also of the otters and martens. It used to be thought that it was a member of the bear tribe, but it has nothing to do with these animals. It is much more nearly connected with that jovial fisherman of our rivers and brooks, the otter.

Here is another mammal which is seldom seen but is not really uncommon. Otters occur on most of our rivers, but they have a wonderful knack of keeping out of sight. I used to have a pet otter called Madame Moses, a dear creature who would follow me about like a dog, yet she knew how to do the disappearing trick. One day when I was playing with her—she was retrieving a stick from the water for me—a stranger came by, and at the sound of an unknown voice Moses dived, came up under an overhanging bush and there lay in the water, with only her nose and eyes above the surface.

The otter is a truly aquatic animal. It has webbed feet, a dense velvety water-proof coat, and a long, thick, strong tail, known as its "pole," which is useful to it as a rudder, and it swims and dives in an amazing manner. To see an otter at play in the water, turning and twisting, tumbling head over heels, doing porpoise dives, and one fantastic trick after another, is a most joyful sight.

Sometimes a fisherman plying his rod

on some quiet riverside will see otter-cubs romping together, making the water fly far and wide, and enjoying themselves with the mad abandon of the young.

Otters, unlike badgers, do not mind coming out by day and often in quiet, secluded places they make daylight excursions. Yet the night is their time of greatest activity, when they chase the little spotted trout in the deeper parts of the woodland brook, or visit the lake to catch roach and petch among the reeds and weeds. But their diet is by no means limited to fish. They love eels, dote on frogs, and catch rabbits, water-towl and water voles for variety.

Although the otter is a fisherman by trade, and although its webbed feet testify to specialization for aquatic work, it is quite at home on dry land and often takes long excursions ashore.

I have, after a snowstorm, when the fair surface of the newly fallen snow afforded interesting reading for those versed in the script known as "padmark and trail," tollowed the footprints of an



AN OTTER TAKES A WALK

Otters, though they have webbed feet and are otherwise adapted for aquatic conditions, do not live entirely in the water. They spend some time on the land searching for frogs, slugs, snails and worms.

otter from a stream far across country.

What fun that otter had. It looked into rabbit holes, it explored under bushes, poked here and poked there, and slid down every bank it came to. The trail showed plainly how it tobogganed on chest and stomach, foreteet folded back, sliding head first to the bottom; but at last it had to return to the river.

Playful Otters

As I said earlier, otters are most cheerful, playful animals. The cubs romp madly, and not even the most staid and elderly individuals can resist the chance of some fun. Snow is a great joy; they roll and tumble in it and neglect no chance to slide. Then they roll snowballs, throw them in the air and catch them on their noses.

Otter cubs may be born at any time of year, but the majority appear in the spring. They are blind and helpless to begin with, but when their eyes open they become more active, yet to start with they have little inclination to leave their

riverside "holt"—a hole in the bank or a recess under the roots of some tree and venture into the water. Unlike young ducks the timid little things have no instinctive love for the water. It is only by degrees that they take to this natural element and follow their mother in chase of fish and cels.

From the otter, a hunter of the waterways, we will turn to a wee hunter of the meadows, namely, the tiny weasel which chases the field mice through their tunnels between the grass stems. This quick and nimble little beast is what we may term a "second cousin" to the otter. They are distant relatives and have a similar playful outlook on existence. There is also the stoat, which many persons confuse with the weasel, but the latter is a good deal less in size and it has a plain tail. The stoat always wears a pencil of dark hairs at the end of its tail, the weasel never does, and this is an infallible distinction even when the two animals don winter white.

It is rare for the weasel to put on



THE WEASEL

This nimble little beast may sometimes be seen darting alongside a hedgerow or occasionally hurrying across a lane. It is a hunter and preys on mice and voles.



THE STOAT

. R. THOMPSON

Another hunter is the stoat which is larger than the weasel, and which may be distinguished from its smaller relative by the dark hairs at the end of its tail.

winter dress in Great Britain. When a white one is met with it is usually a freak that was born white, but the stoat, particularly in the north, makes the change comparatively often, when it becomes the regal ermine. It is not always realized that the fur known as ermine, and which is so highly valued is nothing but stoat, the black spots on it being dark tail tips.

The stoat, being bigger than the weasel, hunts bigger game and takes toll of the rabbits, and as too many rabbits are a serious nuisance, it does good work in keeping them from increasing unduly. In the same way the weasel is invaluable among the small rodents, killing great quantities of mice and voles.

It is a curious fact that there are no weasels in Ireland, only stoats, and the lrish stoat is not quite the same as that of Great Britain, just as Ireland has its own species of hare, but of that more later.

The stoat and weasel are both found c.c.-g

throughout our English countryside. They race and chase up and down the hedgebanks, through the woods and across the meadows, and even out upon the moors. They have two relatives, still natives of the British Isles, but these we can no longer hope to see when we take an afternoon stroll. They are the pine marten and the polecat. Both were formerly numerous throughout the land, even up to the outskirts of London, but they are now rare and found only as refugees in the remote hills.

The polecat, which is the same size or a trifle larger than a ferret, and looks like a very dark handsome one of the "fitch" type, is now confined to Wales, being still fairly plentiful on the coastal plateau of Cardiganshire.

Like the stoat, it is a rabbit hunter, but in the old days, when it was plentiful, it sometimes got into fowl pens and then did much damage, so what with one thing and another it had a bad reputation. In some places parish rewards were



WILD POLECAT

The polecat, which is now only found in Wales, is a handsome animal about the size of a ferret. It preys on rabbits, birds and their eggs, but when more common it had a bad reputation as a robber of poultry runs.



THE PINE MARTEN

This handsome cat-like creature has only survived in such places as the Lake District and parts of Wales and the Scottish Highlands.

offered for its destruction, and it was exterminated in most parts of the country.

In those days when the polecat was numerous, that lovely animal the pine marten was also common in the countryside, though it is now so rare that few people have ever seen one. A marten or two may yet linger on the Lakeland Fells. It is rumoured there are some in the heart of Wales. There are definitely a few in the Scottish Highlands, and a certain number exist in the west of Ireland, but all told they are not many. The day has long gone by when an animal with a face like a little fox, about the size of a small cat, with a brush like a squirrel's tail of rich brown coloration, set off by a cream throat patch, might be seen sunning itself among the branches of the trees.

The marten was a tree dweller, and chased the squirrels through their overhead ways. It raided the pigeons' nests and slept in hollow trees, and did all with an agility that equalled, or surpassed, that of the squirrel itself.

But we are considering the animals of the countryside, and the lovely, intelligent, inquisitive marten is now an outlaw of the wilds, so let us turn to a creature which is to be met with in most woods, which is far-famed in story and song, which is often abused, but which is nevertheless protected and encouraged, in other words that cunning rascal the fox. Were it not for fox hunting, it is certain that the fox, like the marten and the polecat, would long since have been destroyed in most parts of the country. It is far more mischievous than either of them, but it pays for its misdeeds by providing sport.

With its amber eyes, black-tipped pricked ears, golden-red coat and long, full brush, the fox is truly a beautiful beast. Even when it is looting a pen of fowls we cannot withhold our admiration. The worst of a fox is that it is not content to kill what it needs to eat, but when it gets the opportunity, will slay for sport, as in the case of some

fowls belonging to an old woman who went out to a Christmas Eve supper, and forgot in doing so to shut the door of her hen-house before leaving home. When next morning she went to let her hens out, she found that the fox, too, had celebrated Christmas Eve—not one fowl was left alive. It had bitten their heads off and the mutilated birds were left scattered about all over the place.



SCOTTISH WILD CAT

Found in the Highlands this striking animal is naturally wild, and is not merely a domesticated cat which has returned to a natural state.

Of course the fox does not live entirely on hens, far from it, for they are only the result of what, for the fox, is lucky chance. Its mainstay is the rabbit, but it does not despise field mice, frogs and even beetles. There is a large black-beetle, called the dor beetle, which flies ponderously at dusk, and foxes are fond of pouncing on this insect when it tumbles to earth.

There is something very catlike about the fox, both in manners and character it has more of puss in its make-up than the dog, though it has actually more anatomical affinity with the latter. I have watched a fox creep out from the bushes with careful, stealthy steps and proceed to stalk some feeding rabbit; its whole air, the cautious way it moved forward and its patient approach, was exceedingly catlike, while cubs, too, are kittenlike in their playfulness.

What an exquisite spectacle do fox cubs afford, when the little things come forth from the earth in which they were bred, to run to and fro, tumble one another about and gambol with windblown feathers.

Fox cubs are born in the early spring, the majority in March, and the vixen nurses them devotedly during the first two weeks while they are blind and helpless, but as they get bigger and begin to eat solid food she, with the help of the dog fox, her mate, gets

meat for them, rabbits, birds of all sorts and anything she can pounce upon.

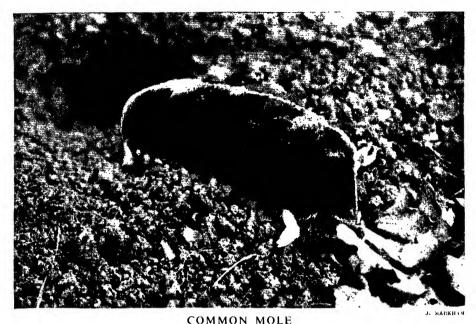
As the young ones get stronger, both the old foxes have to work hard, and now is the time that poultry raids are most apt to take place. However, the cubs grow up very quickly, and by the time harvest begins they are practically full-grown foxes. At this stage they enjoy camping out in the cornfields, at least until the day arrives when the reaper and binder begins its work. Then, as the grain falls before the reaper, they have to bolt from its shelter and race off to the woods while the shouts of the farmhands crying "Tally-ho!" behind them, die away in the distance.

The next of the British Carnivora, or predatory mammals, is the wild cat. To most of us "wild cat" means a fireside puss that has tired of an easygoing indoor life, and taken to roaming



HEAD OF DOG FOX

A close-up study of a small fox. This beautiful animal is most unpopular in the countryside for it is a notorious raider of hen-roosts. Were it not protected by hunting people it would probably have been exterminated long ago.



Here is a mole which has emerged from its underground home to gather dried grass and oak leaves with which to line its nest.

the woods. Such a cat becomes a truly wild animal, living by hunting and as much a creature of the countryside as the fox or badger. I have known a "gone-wild" cat bring up kittens in a rabbit hole, and maintain them on a diet of young rabbits and birds. But of course the cat is ever a hunter. The veneer of domestication is a thin one. and it takes little to make it forget the saucer of milk. Nevertheless when I write of the wild cat I do not mean a tabby who has taken to the woods, but that fierce, untamable animal known to scientists as Felis silvestris, and now, so far as Britain is concerned, only found in the Highlands of Scotland.

Wild Cat of the Hills

This cat is a different animal to puss who purrs on the hearth-rug. The latter is believed to have been brought from northern Africa, while this other cat is indigenous to our woods and hills, though now outlawed to the distant mountains of the north. It is a great,

striped, rusty-hued cat, with a heavilyringed tail, black soles to its feet and of ferocious temperament. No true wild cat has been really tamed. I got a tiny kitten once and brought it up by hand, but my Satan was well and truly named, and remained worthy of the designation to the end of his days.

But let us return from a refugee in the hills to the familiar animals of the countryside, and consider such small but important creatures as the mole, the shrews and the field mice. The last named belong to the order Rodentia, and the mole and shrews to the Insectiora, or insect caters, animals with a goodly outfit of teeth of the tearing type, quite different from the chisels used for gnawing by rats, rabbits and mice.

The mole, which raises the hillocks of soil that dot the turf nearly everywhere, although blind and a dweller underground, is of extraordinarily wide distribution on the mainland of Great. Britain, as it is also well distributed likewise on the continent of Europe.

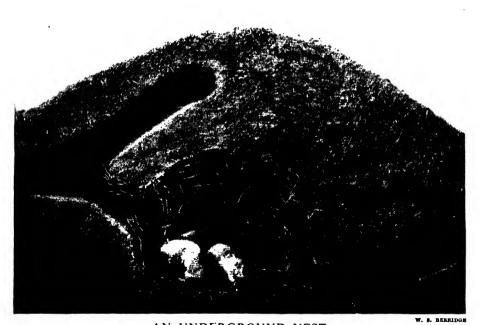
This amazing little beast is marvellously specialized for what we may term tube life, and its very body is just right to go up and down a tunnel. Its fur has no set in any direction and the velvet is resistant to wet and dirt. Its minute eyes, which have long ceased to be of utility to it (they may enable it to distinguish light from darkness, but it is certain that for all practical purposes it is blind) are so buried beneath its fur that they are hard to find. The ears of the mole, too, are carefully covered so that no earth can get into them. But it is in the mole's immense forepaws and the great development of its shoulder muscles that we see particular specialization for mining and driving tunnels. The mole is indeed born to its trade, which it plies with great energy.

If it does dwell in darkness, if it is excluded from sun and wind, the mole lives strenuously, being in its way as great a hunter as the stoat or weasel, though its quarry is a mere worm.

The mole lives entirely on worms, of which it consumes a great quantity to get which it has to work hard. One I kept in a cage for a while ate its own weight in worms every twenty-four hours.

The fresh hillocks we see all over the fields tell us of its worm-hunting underground. It has main thoroughfares which run far under the turf and enable it to race from place to place, but when it feels hungry it must dig afresh, pushing into the damp soil, throwing up the loose earth out of its way and with its keen nose scenting the worms ahead of it.

When tired with strenuous exertion, the mole goes home to its sleeping quarters, a comfortable chamber furnished with a nice nest under an extra big hillock, which hill is called the mole's "palace" or "fortress." I have often opened the "fortresses" to see their design, and have invariably found a central chamber containing a bed of grass and leaves with several tunnels



AN UNDERGROUND NEST
This photograph of a mole-hill partly cut away shows young moles in their subterranean home.



The pipistrelle is the most common species of bat in this country, and here are seen three adults and seven young clinging to a cellar wall.

leading to and from it, and a hole at the bottom, which evidently serves as an emergency exit.

Farmers do not like moles because they make such a mess of the fields, and a man is often employed to trap them, so that poor little velvet corpses, hung on the bushes as trophies of the molecatcher's skill, are a sadly frequent sight. A great deal of skill is needed to catch a mole, for the little animal, despite being sightless, is no fool and is quick to sense any strange object in its tunnel. It is also quick to sense, no doubt by smell, the presence of a strange mole. If two moles unknown to one another meet in a tunnel, they not only refuse to give way but fight with utmost pugnacity, though I do not think their ferocity equals that of the tiny shrew.

Many people refer to shrews as shrew mice, but the small, long-nosed beasts that are so plentiful in the herbage, which are found from sea-level throughout the countryside, on the moors and far up the hillside, have no affinity with the true mice.

They are not rodents but belong to the *Insectioora*, and in their tiny way are queer creatures, so strange that in days of old they were the centre of many weird legends and superstitions. They were even credited with the power to inflict harm upon livestock. It was believed that if a shrew ran over the leg of a cow as she lay at rest in the field, that cow would immediately become very lame; however, there were means by which the cow might be cured.

But if all this was mere superstition, it is a fact that shrews are strange animals; they are so restless and energetic, they are so quarrelsome, and they are so often found lying dead on path and roadway.

One reason for the many dead shrews we see is that cats, although they cannot resist pouncing on them, dislike and will not eat them. Nor will dogs and foxes. Seemingly, these animals cannot endure

A MISCHIEVOUS CREATURE

The grey squirrel, a destructive alien introduced from America.

their peculiar odour. Birds of prey, such as owls and hawks, which have little or no sense of smell, eat them greedily. I have watched an owl bolt a shrew at one gulp. Yet the shrews thrown aside by cats, foxes and so on, do not account for all the bodies we see on paths, roads and elsewhere, particularly in the autumn. The explanation generally put forward is that shrews are mammals of short life. They have little greater expectation of existence than the annual plant. Those born one summer bring up a large family or families the next season, then die and the corpses we see in the autumn are mainly those of shrews that have lived their span.

But shrews, even if their lives be short, live merrily, dashing here and there, voicing their excitements in shrill, highpitched cries, pouncing on worms, spiders and insects -they live entirely on such fare -and having joyful combats with their neighbours. These highlystrung temperamental little animals are ever pugnacious and will fight on small provocation, often to the death, when the victor may not be above cannibalism.

Creatures of the Undergrowth

In the shrew's excitable disposition there seems little room for timidity or fear. I have sat on a woodland bank with a colony of common shrews in busy activity around me, popping up out of the moss, slipping away under the ferns, appearing, disappearing and reappearing like fairy things. One ran over the toe of my boot. For a brief second its long, quivering snout played to and fro upon the leather and then it ran on. Shrill voices came from here and there in the woodland undergrowth, but soon silence fell. Perhaps the different members of the party had sought their sleeping places for a brief rest. It seems that many small animals rest and work in comparatively brief spells throughout the twenty-four hours, and are not definitely creatures of either the night or day.

The shrews I have just described were common shrews, a species which deserves c.c.---G*

its name, being numerous throughout Great Britain, though it is not found in Ireland, where the pygmy or lesser shrew holds sole sway. This last mentioned, a wee creature, hardly more than a pencil thickness of vitality and devilment, is a smaller edition of the common shrew, and like it is clad in grey-brown velvet. The best means of telling the two apart, for the pygmy can easily be mistaken for a young

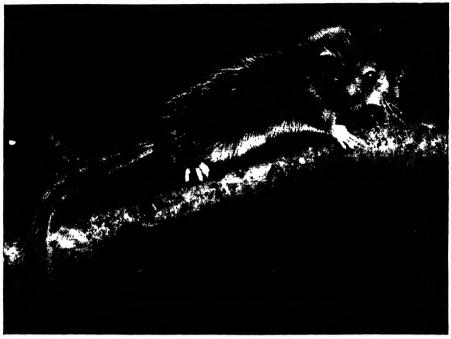


RED SQUIRREL A lively sprite of the woodlands which builds a nest or "drey" high in the trees.

common shrew, is by the length of the tail, which is shorter than that of the head and body in the common shrew, and exceeds it in the pygmy. But on the mainland of Britain the wee pygmy is seldom numerous like the common

Another shrew of our countryside is the larger black and white water shrew, which loves to play in and out of ditch, stream and river, and which swims and dives like an expert, and lives chiefly on aduatic insects.

From the water shrew we must turn



J. KRARTON

THE DORMOUSE

During autumn the dormouse fattens on nuts and berries in preparation for its long winter sleep in a hole in the ground.

to our last countryside member of the *Insectivora*, namely, that quaint personality of hedgebank, meadow and coppiee—the hedgehog or urchin.

The hedgehog in its prickly jacket is a well-known beast, though usually seen in the role of an inanimate ball of spines, for at the least hint of danger it invariably rolls itself up with its nose between its hind feet and presents a formidable armature to the public. This passive resistance is often effective. Most dogs find it beyond their ability to deal with a rolled-up hedgehog, but a few clever ones manage the deed.

It is said that the badger, with its strong paws, will unroll, kill and eat hedgehogs, but I have never succeeded in getting any evidence on the point, nor have I ever seen a hedgehog carrying home apples impaled on its spines as winter provisions. This last story is pure nonsense, for the urchin does not

eat apples or any vegetarian fare, but lives on grubs, worms, insects, frogs, carrion and such oddments as it can get. It does not despise flesh, far from it, but it is not a hunter by trade.

In the winter we may sometimes find the hedgehog curled up, sound asleep, cold and senseless under a pile of brushwood, but it usually hibernates in a well-made nest down some convenient rabbit hole, whence it emerges in the early spring with a great appetite and thirst.

While the hedgehog slumbers in its hole certain other creatures of the countryside are likewise in retirement, namely those remarkable little animals the bats, all of which hibernate in winter, hitching themselves up by their heels to hang head downwards and sleep comfortably in what looks such an uncomfortable position.

Summer evenings are the time to

gain some idea of the life and activity of these interesting creatures, which, as the light begins to fade, come forth from their hiding places, from the church tower, from holes in hollow trees, from caves and from beneath the rafters of house and barn, to fly on skinny wings through the dusk.

" Flittermouse"

In days of old people thought that bats were half mice and half birds, and the countryfolk yet speak of the pipistrelle or common bat as the "flittermouse," but they have no affinity whatever with the birds, and not much with the mice. Bats are true mammals, that is, they suckle their young as the cat does her kittens, but they are a highly specialized group with limbs adapted for flight, and our British bats all live on insects which they catch while on the wing.

There are some dozen species on the list of British mammals, but those most frequently seen in the countryside are the pipistrelle, the noctule and the

long-eared bat. The last is a peculiar little creature which well deserves its name. for it has immense ears that are almost as long as its head and body. While the bat is at rest these organs are furled away, but as it wakes up to activity it extends them and waves them about like great sensitive feelers. They overshadow its sharp little face and small bright eyes. By the way, how did the expression "blind as a bat" come into use? Bats are not blind, they have excellent eyes, and can find their way about in any light, including the poorest of illumination. One evening, when a long-cared bat had come indoors and I was trying to catch it with a butterfly net, I was amazed at the ease with which it avoided my strokes with the net, and how it dodged about the furniture, but of course this species is adept at threading its way in, out and around objects, for it does its hunting about the trees and bushes.

The noctule, or great bat, flies high overhead, seeking the insects that go aloft, and the little pipistrelle circles



MEADOW VOLE

This short-tailed, rough-haired little mouse of dull brown colour is very common in the fields.

round and round in the shelter of the house or wherever gnats and such things may be found. Each kind of bat hunts in what, for it, is the best locality. The queer horse-shoe bats, with leaflike appendages on their noses, that make their headquarters in caves, come forth to hunt the nearby countryside. The daubenton or the water bat, nearly

and of the dawn, let us go on to certain animals that love the sun, namely those tree dwellers, the squirrels, both red and grey. A sprite of the tree tops is that fairy creature the red squirrel. It loves the upper branches and the overhead ways; it makes its nest aloft, and in its well-built "drey" passes the greater part of its time. When it comes down,



THE BROWN RAT

J. MARKHAM

A notorious thief which continues to thrive despite efforts to exterminate it. This animal is believed to have spread across Europe towards the end of the seventeenth century.

always seeks its food over water. Bats are vespertine in their habits, that is they tend to hunt at dusk and dawn. Some stay on the wing most of the night, but if you wait and watch, when the sun is saiking and the shadows are lengthening, you will realize that "the edge of night" is their great time. As the light begins to fail dark forms appear fluttering through the shadows, and the air is full of activity, but as the shadows deepen, as the stars come out, the rustling of skinny wings becomes less frequent and soon ceases almost entirely.

From these creatures of the evening

to scratch in the mossy soil beneath the trees, or to seek a hidden nut, it is always with an eye on the tree it has left, and to which it will scamper back at the slightest alarm. Away it races, springs up the trunk, dodges behind the tree, peeps curiously around, and says "vut! vut!" in anger at the disturber of its peace.

The grey squirrel, introduced here from America, has not the spritely grace, the plumed ears, nor the fascination of our native species, moreover it has got a very bad name as a thief of various things and robber of birds' nests, since it has spread far and wide through



These dainty acrobats build their nests across three or four corn stalks.

the countryside. Worse still, our lovely red squirrel seems to give ground before it, and where grey squirrels abound the red is seldom, if ever, seen.

Squirrels, though so active when out and about, spend long hours resting in their nests, particularly during wet and cold weather, but our English squirrels do not hibernate. In autumn when food is plentiful they busy themselves gathering nuts and hiding them here and there, but how many of these hidden treasures are recovered later is another question.

Woodland Sprite

One of our countryside animals that really does hibernate is that other woodland sprite, the dormouse, which does not bear its name of "dormouse" for nothing. This lovely little beast, in its coat of yellow-buff with white underneath, and its large dark eyes, spends the summer days in a neat round nest of grass, honeysuckle bark and leaves placed in some bush, but when October's chilly mornings arrive it seeks warmer quarters. It makes a winter nest down a hole in a bank, under a tree stump, or somewhere out of sight, and then it settles down for a good sleep. Fat, after living sumptuously on all the good things of autumn, it has on its stout person ample provision to last some time. It goes to sleep, it becomes cold, and its torpor is so profound that it is hard to believe it is really alive, yet when the temperature rises it comes to life, uncurls itself and comes forth, thin, hungry and ready to celebrate its emergence.

Now the mice of field and hedgerow do not sleep like this, but remain alert throughout the worst days of winter. There is the long-tailed field or wood mouse, a sleek, active, quick-witted little creature, and its handsome relative the yellow-necked mouse, both of which are about the seasons round. Likewise there is the bank vole a pretty mouse in chestnut brown with a white front, which is ever to the fore; and there is that little beast of the grass, known as the meadow vole, which also remains

on the active list. This last is the rather rough-coated little mouse of dull brown hue, with quite a short tail, which is often numerous in the hayfields.

There are different forms of these mice in various parts of the British Isles; for instance, the islands of the Orkney group have their own species of vole which is divided into sub-species on different islands, but we are here considering the animals likely to be met with in our countryside, and such types are not our concern.

Of voles it only remains to mention the water vole or water rat, that larger edition of the meadow vole which likes a waterside life and is to be found along most of our waterways, where it nibbles the waterside vegetation and goes for a swim in the river.

It is sometimes confused with the real rat. The common or brown rat occasionally leaves its life of thieving about our dwellings to take a country holiday, when its ill-deeds may get wrongly credited to the blameless, harmless water vole.

The brown rat is too well known to need further comment here, and its relative, the old English or black rat, is not a countryside animal, being chiefly found on ships and in ports. Neither does that lesser relative of the rats, the common house-mouse, require much said about it, for we all know it too well. However, there is a little animal of the mouse type that we must not dismiss too lightly, and that is the dainty harvest mouse.

Dainty Harvest Mouse

This small and beautiful rodent, hardly bigger than the pygmy shrew, sandy red in colour and with a white stomach, is truly an open-air creature. It lives in the herbage, in the thick sedges, reeds and grasses of the ditches for part of the year, and in the grain as this grows tall and ripens. Here it makes a tiny round nest, and here very often its young are born. At harvest time great numbers of harvest mice are carried to the stackyard in the sheaves of corn, with dire



A NIGHT WANDERER

With its longer ears and legs and larger body the hare is easily distinguishable from the rabbit. It lives in the open and rarely burrows.



TO FRISH PASTURES

skios domo

A springtime scene in Glen Feshie in the Cairngorms, with snow still lingering on the hilltops, and a herd of red deer crossing the river in search of new grazing.

results for the mice when threshing time arrives.

The harvest mouse was formerly quite well distributed throughout England, but it is now confined to our southeastern counties, and many naturalists blame modern agricultural machinery for its decrease.

And now for our larger rodents, for the brown hare in our fields and on the downs, for the mountain hare on the northern moors, and for the rabbit which is practically everywhere.

As I said to begin with, the rabbit is certainly the best known and most obvious animal of the countryside, being on view from the verge of our towns to the most unlikely sea-girt islands. The hare, easily distinguishable at a glance by reason of its more bulky shape, longer ears, its redder coloration, and its easy loping gait, leads a different life from the rabbit, for it rarely if ever goes underground.

The young rabbit is born blind, pink

and naked, in a snug nest down a tunnel, while the leveret is born with a good coat and its eyes alert in an open "form." This applies not only to the common brown hare, but similarly to the blue, Scottish or mountain hare, and the Irish bare.

Curiously enough, our well-known brown hare is not indigenous to Ireland, the hare found there being a form of the mountain hare but one that does not, as a rule, turn white in winter. The Scottish hare nearly always changes its coat colour, becoming during the winter months as white as the snow, which in the north comes early and lies late on the hills.

I once brought a mountain hare leveret down from the north. It grew up into a splendid hare, and when winter came it duly changed its colour, gradually becoming as white as any hare on its native hills.

But to leave hare and rabbits for bigger creatures, we must not close this chapter without reference to the finest of all our countryside animals—namely, the deer. There was a time when the stately red deer, when the stag with his splendid antlers, was to be seen in every part of the land, but that day has long gone by. Wild red deer, so far as Great Britain is concerned, are now limited to Exmoor, the Lakeland Fells and to Scotland. In these places, parties of hinds may be seen passing along the skyline, and the stags may be viewed in their majesty. There are parks, too, where red deer are kept and where this finest of British mammals may be admired. However, the most frequent as well as the best known of our park deer is the delightful fallow deer, in which the buck has somewhat palmated antlers. A considerable number of fallow deer live a perfectly wild life in the New Forest, and experts argue as to whether they are bona fide wild animals or are the descendants of park deer. Certainly during recent years fallow deer have escaped in many districts and have successfully taken to the woods.

know many woods where fallow deer roam as free and independent as the fox and badger, and are quite as well entitled to be termed wild animals of the countryside.

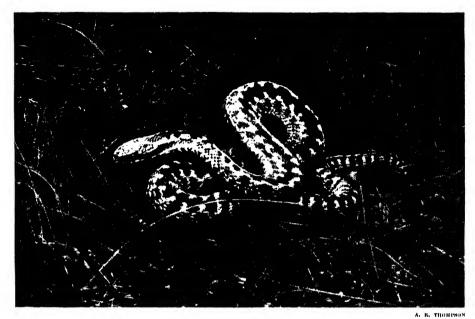
Then there is the little roe deer, the smallest of our deer, but not the least charming. It has not the social inclination so distinctive of our other deer. The little buck, with his small pricked antlers, goes about with a doe and her one or two fawns, but you never see a company of any size. It is fairly numerous in the north, and occurs in one or two places in the south, such as the Dorsetshire woods, but it can hardly be described as a common animal of the countryside.

No, when we write about the animals of the countryside we mean the hares and rabbits, mice and voles, the squirrels, the bats, the fox and badger, the hedgehog and shrews, and the others that make up the mammalian population of our fields and woods, and to which it is hoped this chapter has served as an introduction.



FALLOW DEER

A herd making a pleasing picture on the skyline. Such animals are maintained in many parks, but they are also to be found wild in the New Forest and elsewhere.



ADDER OR VIPER
This poisonous snake may be recognized by the dark zigzag band along its back.



GRASS SNAKE

This harmless snake is a greyish-brown colour with a splash of orange on its neck, by which it may be distinguished from the viper.



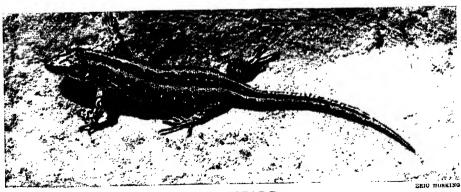
SLOW WORM

Not a snake but a harmless lizard.



COMMON LIZARD

A small reptile frequently seen basking in the sun.



SAND LIZARD

This beautiful lizard is only seen in Surrey, Hampshire, Dorset and Lancashire.



BUFF-TIP MOTHS

These moths have silver-grey front wings and a pale buff mark edged with two brown lines on the end of each wing. When resting with its wings folded the insect is effectively disguised, its protective colouring giving it the appearance of a broken birch twig. This moth may be seen during June and July, but it flies little during the day.

THE INSECT WORLD

by W. PERCIVAL WESTELL

Insects constitute by far the greater proportion of animal life throughout the world, and their number is legion. They are to be found in air, earth and water, and there are a number that are marine dwellers. They are admirably tashioned for the life they lead, suited as it were to the environment in which they pass their days, and in many cases

protected by form or colour, or both, so as to be immune to their enemics.

Many insects are predatory, preying upon those of their own species or of another. Others are parasitic either on or in the body of a bird, mammal or other animal.

We all know the beauty and attractive colours of some

species especially among butterflies and moths, but others are drab and even repulsive looking.

Some, such as bees and wasps, as we may have painfully learnt, protect themselves by stings, others by squirting out an irritant fluid, and still others mimic bees and wasps in their general appearance and escape persecution in consequence.

Insect life plays a prominent part in the realm of nature. Some act as scavengers, others prey on harmful pests and many play a most useful part in the fertilization of plant life. In fact, the beautiful colouring and scents of flowers which afford us such delight are really adaptations to attract insects which, by carrying pollen from one flower to another, so effect cross-fertilization.

Although there is, unfortunately, a large assembly of injurious pests, it is

essential that one should be able to discriminate between friend and foe. Only recently I discovered that a small black insect on my black currant bushes was attracted there by the obnoxious mites curled up inside the "big bud" which is such a nuisance, and so harmful to one's favourite fruit.

Another example is the larva of the

PUPÆ OF TWO-SPOT LADYBIRD

popular ladybird. It is rarely that any one destroys the ladybird in its perfect state, but many, unaware of the fact, unwittingly put to death the smoky larva of this most useful beetle under the impression that it is an enemy which must receive the death sentence at all cost.

In the case of butterflies and moths it is the larvæ or caterpillars that are the sinners as, except by depositing their eggs on our favourite plants, the grown-ups do not carry out any mischief. On the other hand, there are certain kinds of beetles which, both in the larval and adult stage, must be regarded as enemies.

Insects belong to the group of animals known as Arthropoda, or jointed-limbed. They have no backbone, and their outer covering is a hard skin called chitin, which comes from a Greek word meaning a tunic or outer dress.

The parts of the body consist of head, thorax and abdomen, and, as a rule, these are distinct from one another. A perfect insect has three pairs of legs (spiders, which are not insects, have four pairs) and the feet of some are armed with claws. Others, such as the house fly, possess pads by means of which

they are able to walk forwards or backwards on a smooth surface such as a window pane.

There are still others, such as beetles of various kinds, whose feet are adapted for digging, whilst the water beetles have their feet so fashioned as to be able to use them as oars for propelling their bodies through the water.

Only one pair of wings are present in some insects—such as the *Diptera*, of

mouths of insects due to different methods of feeding. Some are vegetarians, others are carnivorous. It is the vegetable feeders which concern the fruit and vegetable grower, whilst others—such as the elm bark beetle—are very destructive to growing trees. Some have mouths adapted for sucking juices, and others have mouths devised for gnawing, cutting or tearing.

Those insects which suck their food



GREAT GREEN GRASSHOPPER

MONDIAL

A bright green insect with brown markings. It is the male of the species which produces the characteristic chirping or scraping sound.

which the daddy-long-legs is an apt example—but usually there are two pairs of wings. Insects have no lungs, breathing by air tubes which spread from the sides of the abdomen all over the interior of the body.

From the head of an insect the reader will have noticed two organs protruding. These antennæ, or feelers, are delicate organs of touch. These feelers vary a great deal in form, and some entomologists are of opinion that through their aid the owners are able to feel, hear, smell and touch.

There is considerable variation in the

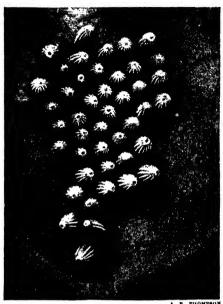
take it in through a tube called a proboscis, or trunk, which comes out from the lower lip. This organ varies in form and length in different species.

Most insects possess two large eyes. These are usually compound; that is, they are made up of a large number of small eyes congregated together on the sides of the head, as in the dragon-fly. There are also in some cases three or more simple eyes between them. In the house fly the compound eyes are composed of about four thousand simple ones.

The various stages in an insect's life



EGGS OF TREE LACKEY MOTH
These are deposited round twigs like
bracelets.



EGGS OF SMALL WHITE BUTTERFLY
The female lays its eggs on the underside of cabbage leaves.



CATERPILLAR OF SWALLOW-TAIL BUTTERFLY This hatches from eggs often found on wild carrot leaves.



CATERPILLAR OF LARGE
TORTOISESHELL BUTTERFLY
In addition to the caterpillar a chrysalis or
pupa is seen on the left.

cycle are first the ova, or egg; second the caterpillar, grub, or larva; third the pupa, or chrysalis; and fourth and last the imago, or perfect insect.

Many insects do not appear to take any precaution to guard their eggs and leave them to be hatched out by the warmth of the air, earth or water. Yet ants, bees, wasps, and others rear and tend their offspring with great care and attention. Such insects as crickets, dragon-flies and grasshoppers do not



SWALLOW-TAIL BUTTERFLY
A species which may be found in fenland.

have the worm-like form, neither do they encase themselves in cocoons.

Some insects travel considerable distances, and there are several butterflies that cross the sea to reach our shores, such as the beautiful clouded yellow and the handsome red admiral. Theirs is a perilous journey, and I have seen hundreds of large white butterflies battered to pieces on the Lincolnshire coast.

One common insect for which no one has a good word is the carwig, and not without reason. It is an enemy to our garden plants, and its chief characteristics are its quick movements, the forceps or pincers at the end of the body, and the way in which the female looks after her eggs and young. Unlike most insects, she watches over and helps to hatch them out and tends her offspring as a hen does her chicks.

The act of abruptly turning up the end of the body when disturbed is done to fold out of harm's way the small ear-shaped wings. The name of earwig should rightly be earwing because of this resemblance, and it can and does fly if occasion demands. It is mostly a vegetable feeder, but will resort to animal food according to its taste.

On a hot summer's day when the birds are listless and only insects are astir, then is the time to listen for the chirping of the grasshopper amid the wealth of its miniature forest of grasses.

Happy-go-lucky Folk

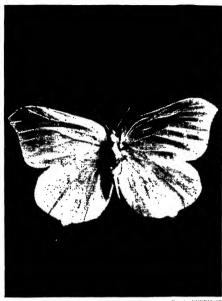
There are long-horned and short-horned species of these happy-go-lucky little folk, and on the feelers of one or the first named at least four hundred and eighty joints have been counted.

The great green grasshopper is a representative of the long-horned species, and is heard or found in bushes, grassy lanes and hedgerows in August and September, especially in the west country. It is two to three inches in length, possesses very long hind legs and large eyes.

The common grasshopper of our fields, meadows and waysides is a short-horned species, and has three-instead of four-jointed legs. The ears are placed on each side of the base of the abdomen. In colour it may be brown, green, red or yellow. The eggs are long and narrow, and are laid in batches in a hole in the ground, the hole being made by a short, stout ovipositor at the tip of the female's body.

Mother grasshopper takes the precaution to cover her eggs with a sticky fluid which, as it hardens, gives them protection, and when the young hatch out they undergo a series of moults until the adult state is reached.

How prodigious are the leaps and

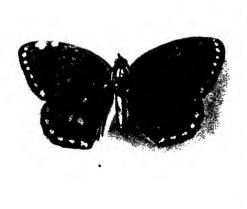


BRIMSTONE BUTTFRFLY

The male of this species is a deep yellow, the female being much paler.



COMMON BLUE
The male is blue and black; the female
brown with black and orange spots.



DARK GREEN FRITILLARY
This butterfly is one of several species of
fritillary, all of which have tawny coloured
wings and dark spots.



CHALK HILL BLUE
As its name implies this species frequents the chalk downs where it is a common and a pretty sight during July and August.

tumbles of this hot-weather reveller! If we could hop, skip and jump a proportionate distance, our transport facilities would indeed be greatly increased.

Four species of bugs may be mentioned—the shield bug, frog hopper, water boatman, and water scorpion, two of these are terrestrial and two aquatic.



RED ADMIRAL

This butterfly may sometimes be seen sunning itself, slowly moving its wings backwards and forwards. It is very dark brown in colour, with strips of red and white spots on the forewings, and red borders and black spots on the hind wings.

The shield bug is, as its name implies, shaped like a small shield, and there are marks on the upper surface of its brown casing that strikingly resemble the face of a Chinese mandarin.

There are also pentagonal shield bugs which are so called because the wing shield does not wholly cover the wings, as in the last species. These bugs frequent plants from which they extract the juices, but they also eat soft-bodied insects. They are brown or green in colour and about half an inch long. There are others smaller and narrower, and some have almost transparent wings. They are all pests of plants.

When masses of white froth appear on plants during early summer the larva of the frog hopper is the cause, and if one of the blobs is examined a soft light green occupant will be found inside. Later, when these frothy secretions disappear, one wonders what has happened to the delicate tenant until, all unexpectedly, a jumpy little brown creature springs a yard or more through the air when touched. The insect tumbles, but soon rights itself without making any fuss. This hard brown intruder is the perfect form of the frog hopper, and it punctures young leaves to extract the juice. This causes the leaves to wither and decay, so that it must be regarded as an enemy.

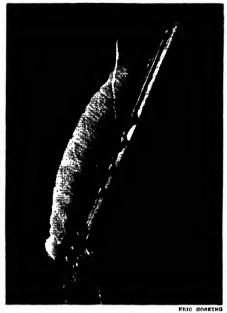
The water scorpion, which is found in ponds and streams, is a brown, torpedoshaped insect, and has been given its name because the front pair of legs are thickened and resemble the forceps of the true scorpion. It has a double tube on the end of the body through which it takes in air. It possesses a short, sharp beak with which it attacks its victims, grasping them with its powerful front legs. When not in use the clawed forelegs are closed like the blades of a pocket knife.

The amazing aphis, or green fly, which is such a pest on beans, roses and other plants, will be known to most readers. These are plant lice, and their rapidity of increase is responsible for the difficulty experienced in keeping their numbers in check.

The alder and caddis flies are plainlooking insects, resorting to damp and watery places. The larvæ of both species pass their lives in the water, that of the alder fly being long and tapering with feathery appendages on each side of its body as well as its legs.

The caddis fly larva protects its naked form in a case or tube made of pieces of leaves, sticks, grains of sand, small shells and other titbits, and one way of distinguishing the adult insect is that this species does not, like the alder fly, fold its wings lengthwise.

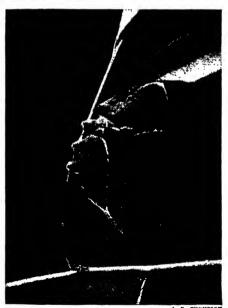
Scorpion and lacewing flies next claim attention. The scorpion fly has almost



POPLAR HAWK MOTH
CATERPILLAR
Often seen on poplar leaves in October.



PEBBLE PROMINENT MOTH
CATERPILLAR
A curious-looking larva seeking food,



PUSS MOTH CATERPILLAR
This grows into a large, fearsome-looking
creature.



OAKEGGAR MOTH CATERPILLAR

A furry caterpillar which curls up when
disturbed.

transparent wings with brown edges and spots. The lacewing is a very pretty creature dressed in pale green with gauzy wings and bright coppery eyes



DEATH'S HEAD MOTH

Markings resembling a skull are the reason for the insect's morbid name.

which glisten like diamonds. The lacewing is also a friend of gardeners as, when in the larval state, it consumes quantities of green fly. The white eggs are laid in batches, each one being fastened to a leaf by a long thread.

The lepidoptera, or butterflies and moths, warrant extensive treatment; but as there are about seventy species of British butterflies and over two thousand moths, only a brief survey is possible.

The brimstone butterfly is one of the earliest to be seen in spring. It dwells in chalky districts where buckthorn grows, the eggs being laid on this shrub, and the larva feeds on the leaves. The female is more brimstone-coloured than the male, but both sexes have a small orange spot on each of the four wings. The wings are rounded with pointed tips, and the veining is prominent.

Common countryside companions among the butterflies are the three whites known as green-veined, large white, and small white respectively. The green-veined is so called because the underside of the wings is greenish and strongly veined. It is a bold flier and delights in a grassy track along a hedgerow.

The large white haunts gardens, fields, lanes and even the king's highway, and

appears early in the year. When cabbages are planted out in the garden, the female is soon attracted to them. That she has

deposited eggs upon them becomes evident when the hungry larvæ riddle the leaves as a result of their feasting.

Both sexes have black-tipped margins on the upper edges of the forewings, but the female has, in addition, two black spots. The small white is a lesser edition of the last named, though commoner, and it haunts similar places.

The small tortoiseshell is one of our most familiar butterflies, and may often be seen hibernating indoors in winter. It is a constant visitor

to the garden, but its black larvæ may be found on stinging nettles. The "tortoise-shell" markings on the wings are relieved with light blue on the outer margins.

When the pale lilac blossoms of the cuckoo flower adorn our damp meadows then is the time to watch for the pretty orange-tip butterfly. It is the male that has orange tips to the forewings, those of the female being black. This species is fond of gardens and seems to have a preference for visiting pinks. The undersides of the wings are mottled with green, and when the wings are closed and the insect is resting on a flower, detection is very difficult.

Startling Transformation

The handsome peacock is another familiar species, and its larva feeds on the same wild plant as its cousin, the small tortoiseshell, i.e., stinging nettles. When it outspreads its wings on a bare patch of earth the effect is very beautiful, the warm fulvous ground colour of the wings being ornamented with conspicuous eye-spots. When the wings are closed this butterfly is all black, and the sudden transformation is almost startling.

In the painted lady, which is a strong flier, we have an immigrant from North Africa. It is larger than the small tortoiseshell and is freekled and spotted with black, brown and white on a tawny-orange ground.

When the Michaelmas daisies are in bloom in autumn the red admiral is almost sure to be attracted and is so engaged on its feast that it allows close approach. Then the observer can see to advantage the rich bands of scarlet and white on a brown and black background. Along a country lane where the tall ragged pink heads of hemp agrimony are found is also a good place to search for this lovely creature.

Rough, grassy fields which have been allowed to go to waste and railway banks are the chief haunts of the grayling butterfly. It is a dull-coloured insect of dark and light brown, and has deckled edges to the wings and light yellow bands. There are two black spots with white centres on the forewings, and one each on the hind ones. After a flight the grayling, when alighting on the ground, falls on one side apparently for protective purposes. It can be seen on the wing during most of the summer months.

The wall brown is a sun-lover, and no matter how hot the earth is it does not hesitate to spread out its wings fully. It is bright tawny yellow with black veins and spots. Its eggs are laid on grasses in early summer.

The meadow brown is, as its name implies, a dweller in meadows. It has a hesitating flight and is quite common. It flies in dull as well as sunny weather, and the dark brownish black wings have a slight splash of yellow, and there is one spot on the forewings. It flies from lune to September.

There is a small meadow brown, also known as the gatekeeper and large heath. It is restricted in its appearance to the months of July and August. It is yellower and brighter in colour than the meadow brown, and is a lover of hedgerows where bramble and marjoram are found.

The ringlet is also fond of bramble blossoms, and is on the wing in July and August. It is blackish brown in colour and has a number of rings which accounts for its popular name.

The small heath is a delightful little butterfly which haunts grassy waysides,



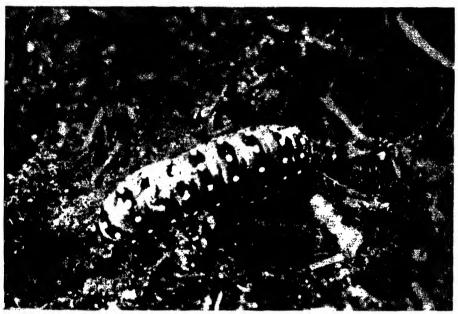
CATERPILLAR OF LOBSTER MOTH

heaths, downs, and other open spaces, and is on the wing from May onwards. It is wainscot-brown, ornamented with a black spot in a white circle near the tip of the forewings.

Another gay insect courtier is the small copper which seems to thrust itself upon one's notice as it flits in front of the rambler when he is enjoying a

and tattered and torn specimens are often seen.

There are several species of blue butterflies, and among them there will probably be seen during the summer the common blue, chalk-hill blue, holly blue, and small blue. May to September sees the common blue on the wing, and it haunts bird's-foot trefoil and



STEPHENSON

CATERPILLAR OF EMPEROR MOTH

country walk. It is a dweller by the wayside, and loves a bare patch of sunlit earth. The copper-coloured forewings are lit up, as it were, by the darker hind ones, but the latter have a fringe of copper freekled with black. Late April or early May sees it on the wing.

The brown argus is common in the southern counties and elsewhere, and seems to prefer a chalk soil. It appears in May for the first time, and the dark chocolate wings have reddish orange spots. When the wings are closed the light under colour is strangely contrasted with the dark colour above. Like others of the same race, this one is a fighter,

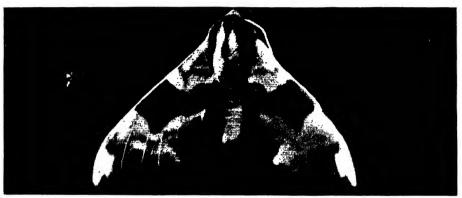
restharrow. The male is blue above, but the female is brown with black, orange and white edging. The chalk-hill blue loves chalk districts, and is abroad during July and August. The male is bluish grey, and has an inner edge of black, with black spots having white circles. On both pairs of wings there are also white margins. The female is sootybrown.

The holly blue is so called because it lays its eggs on that prickly plant. It is rare in the north, but quite familiar in the southern counties. When the flower buds of the holly are showing is the time to hunt for this species, the larva feeding later on the green berries.



EYED HAWK MOTH

Showing the two threatening eyes which are displayed as soon as the insect is attacked.



LIME HAWK MOTH

A. R. THOMPSON

This species is so named because it frequents lime trees. It has a skittle-shaped body,



POPLAR HAWK MOTH

A light brown and grey moth with a white spot on the front wings, and chestnut markings on the inside of the hind wings.

The pale blue wings have narrow margins of black, succeeded by a white outer edge. The female has black patches on the extremities of the forewings, with spots on the outer edges of the hind ones. The under surface is very pale Cambridge blue, with tiny black spots.

The small blue likes shelter, and its favourite plant is kidney-vetch. The male is dark brown to blackish, with inner surfaces of blue, but his mate is dark brown. Its smallness alone is sufficient to identify this butterfly from its cousins.

One day when rambling in the country, or walking in the garden, the reader may notice a small brown and yellow butterfly which hangs loosely suspended, and looks more like a moth than a butterfly.

The insect under notice will be one of the skippers, and may be expected to appear from May onwards. There are several species, such as the grizzled skipper whose wings are chequered in both sexes, the blackish ground colour being marked with white.

The dingy skipper is a darker colour, but also resorts to grassy places on chalk soil. It flies in May and June. The wings are reddish brown, and have white freekled margins.

Small Skipper

The small skipper prefers damp situations, and is quite common. Perhaps you have found the pupa which may be discovered fastened to grasses in a silky covering. The perfect insect has brownish-orange wings with dark veins, and the male has, in addition, a slanting black line on the middle of the forewings. The underside is pale tawny.

The last of our commoner butterflies which calls for mention is the large skipper which, like its relatives, delights to haunt grassy places. It is on the wing during June and July. It has a thick dark body, and the general colour of the wings is yellowish brown with prominent veining. On the male there is a black upward mark on each of the forewings, but the female is lighter and yellower.

Two of the rarest of our butterflies are the handsome Camberwell beauty and swallow-tail. The former is dark fulvous brown, with a ring of blue spots and yellow edges on both wings, and was first noticed in this country in 1748.

The swallow-tail butterfly is a scarce resident in the Fens, and is so-called because the hind wings each have a "tail." Once, we are told, this, the largest of our indigenous butterflies, existed in some numbers at Battersea and Tottenham when these populous districts of London were far more rural than they are today.

Protective Colouring

All our butterflies are day fliers, and nearly all of them are lovers of the sun. The ringlet—so called because of the rings with which the wings of both sexes are adorned—does fly in dull weather, as also do the ragged-looking skippers, but mostly they are sun worshippers like ourselves. Except in a few cases, our British butterflies are harmless in gardens, orchards, and on farms, and where any damage is perpetrated, it is caused by the larvæ feeding on the leaves of cultivated plants. The various wild food plants of the larvæ make an interesting study, and some species are so fastidious that they restrict attention to only one plant.

Seen under a microscope the eggs of these insects show remarkable colour, torm, and structure, and many of the adults are so protected by plain colouring when the wings are closed and they are resting that it is only with the greatest difficulty, or by chance, that they are detected.

There are more than two thousand species of British moths, and these are divided into various groups and families. Some are of large dimensions, such as the hawk moths and others, many are so small that they rarely come under observation of the man in the street, and are called microlepidoptera.

Whilst some moths are on the wing by day, night is the true season for the



GARDEN TIGER MOTHS

Very handsome moths with yellow forewings
marked with brown, and scarlet hind wings
with bluish-black markings.



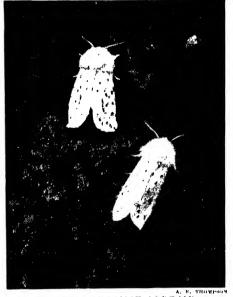
FEMALE EMPFROR MOTH

A most handsome moth. Both the male and
female have a characteristic eye-spot in the
centre of each wing.



MALE PUSS MOTH

This moth is so named because of its fluffy coat which is a light grey with prominent brown veining.



WHITE ERMINE MOTHS
The white wings with black spots are the obvious explanation of the name of this species. The furry head is yellowish at the tips.



PRIVET HAWK MOTH

appearance of the great majority, and it is astonishing how, on a warm summer's evening, hosts of these winged revellers make haste to attend one of the great insect banquets of Nature's year, such as the feast of the honeysuckle when that sweet-scented wild flower is in bloom.

Some of the commoner moths likely to come under notice may now be mentioned. The hawk moths invariably attract attention with their gaudy colours and clean-cut, wide-spread wings. Their caterpillars, too, when full fed, are so large—two to three inches in length—and striped so prettily that any one finding them on lime, poplar, or privet is anxious to know what the uncommon-looking creature is. The larva has a curved horn on the extremity of the body. Four of the species most likely to be met with are the cyed, lime, poplar and privet.

The eyed hawk is rare outside the southern counties, and is on the wing in June. The pinkish hind wings have two "peacock" spots, or eyes, and these markings alone are sufficient to identify it.

The lime hawk favours lime trees,

and is another southern species. As with other hawk moths, this one has a long tongue which is of use when flowers having a long tube are visited. The wings of the perfect insect are coloured brown, greenish, and yellow and near the tip there is a whitish mark. Note the skittle-shaped body.

Poplar trees are sought by the poplar hawk moth on which to deposit its eggs, the larva feeding on the tender leaves. It has a wider distribution than the others, and is on the wing in May and June. This is not a gaudily-coloured moth, being light brown and grey, with a patch of bright chestnut on the inner side of the hind wings, and a white spot on the front pair.

The handsome privet hawk reaches a wing stretch of four to five inches, and although privet is the favourite food plant there are many places where this plant flourishes which do not seem to attract it. It is later in appearance than the three other species mentioned, July and August being its usual months. The large green caterpillar has vertical stripes of heliotrope and white along each side of the body, and the usual curved horn at the extremity.

On the body of the perfect insect there are pretty bands of black and red. The wings are pale brown, with black bands and streaks and a tinge of pink.

Fearsome-looking Larva

The puss moth is so called because of its fluffy "coat." This is light grey with conspicuous brown veins. The larva is at first quite small, but as it eats so it grows until it becomes a fearsome-looking creature one does not care to handle. It has a large black and red face, a hump at the back of the head, and its body narrows until it ends in a whip-like "tail." The rounded cocoon is made of particles of wood, and in this snug abode the larva resides all through the winter, making its exit as the perfect insect in July.

The buff-tip is so called because the tips of the front pair of wings are buff colour, as if one had handled the moth

and thus removed some of the powdery scales. The remainder of the forewings are purplish brown with a double row of wavy lines. The hind wings are whitish. When resting by day it is most difficult to detect, but like most moths it is a night reveller and is thus more rarely seen. The furry larva feeds on the leaves of the oak and other trees. It is a large species with a wing stretch of two and a half inches.

The vapourer moth is of interest because the female only has rudimentary wings and is thus unable to fly. The male is reddish brown and has a white spot on each of the forewings. The wingless female is smoke grey.

The pale tussock is another common species, but seems to prefer the southern counties. It usually haunts places where bracken grows. The male is greyish and has dark powdery freeklings and a dark body. The female is larger than her mate and of lighter colour. The hind wings are greyish, suffused with lighter tints.

Gold-tail is a small moth, and is so called because the white wings and powdery body are relieved by a gold or yellow tip on the abdomen.

Black arches is a pretty moth, but is rare in the north. The forewings have

black and white markings, and greyish on the hind pair. The female has red and black bands on the hind part of the body and this terminates in a point.

The reader will have noticed spidery webs, or tents, on a hawthorn bush containing dozens of slaty blue caterpillars having a bluish-white line along the back and a border stripe of black on either side, lined with reddish orange. This is the harmful tree-lackey moth and should be destroyed. The imago is light yellowish-red, with prominent cross lines on the forewings.

The oak eggar is a large species and well distributed. It is on the wing in July and August, and has a furry larva which curls up when disturbed. The female is much larger than the male and is light brownish yellow with veined wings. The head, thorax and abdomen are covered with thick "down." The male is much darker and is more or less chocolate brown with a light spot on the forewings. There is also a light line and a brown edging.

The larva of the drinker moth, which is much sought after by the cuckoo, feeds on grass blades. The adult is reddish brown with two silvery marks on the front pair of wings.

The buff and the white ermines are



STAG BEETLES

The largest of British beetles. The male is furnished with what appear to be pincer-like claws which are really well-developed mouth parts.



ANTS LARGE AND SMALL.

The large insect is a queen and the smaller one a worker,

familiar small moths. The former is buff, the latter white, or creamy white, with black spots. Both species have a furry head and thorax with a yellowish tinge at the tip.

The garden tiger is a handsome moth, and its furry larva is known as the "woolly bear." The adult has yellow forewings, with patches of rich chocolate brown and scarlet hind wings with bluish-black blotches.

Waysides and heaths are the haunts of the cinnabar moth, and ragwort plants are often tenanted by a great many of the orange and black banded larvæ. The imago is a striking looking insect, as the dark brownish forewings have a line and two scarlet spots, and the scarlet almost covers the hind wings.

The vellow underwing is a common species which often flies into a room at dusk. There are several kinds, and all are pests of the garden. The forewings are brownish, the bright yellow being, as the name of this insect implies, on the underwings.

The dot is a small moth, having a white dot on each of its sooty-grey forewings.

The hind wings are fawn and the veins are prominent.

Another interesting moth is called figure of eight because there is a mark on each of the greyish-brown forewings which resembles that number. The hind wings are whitish.

Angle shades is a very common species and may be seen almost the whole year. It is a pretty moth, being light reddish brown and olive green on the forewings, and whitish underwings.

A Prolific Moth

The gothic is another prolific insect, and the larva is not at all particular as to haunt or food. The imago is on the wing in June and July and is reddish brown on the front pair of wings with a criss-cross pattern of yellowish and greyish buff below. The body is large.

The wainscots are worthy of mention as their larvæ are what is known as internal feeders, being found in the stems of grass, reeds and other plants. Fawn or brownish is the colour of the adult.

Treble lines is so called because the whitish or grevish forewings have three

perpendicular lines on the forewings, and the orange sallow moth has reddish-yellow forewings which have two dark wavy lines on each one. The hind ones are self colour and paler. There are other species of these moths which are partial to the sallow or palm, and on mullein plants there may be tound the larva of the mullein moth. This larva is greenish or whitish, and has yellow bands, some black spots along the back and dots and lines on the sides. The yellowish head is also adorned with black dots.

Mother Shipton is a very common species, so named because of a fancied resemblance to the famous Yorkshire prophetess. It has brown and yellow wings, and the curious marks on the forewings are supposed to resemble the letters "mi" which is the scientific name given to this species.

The winter moth is a great pest as all fruit growers will agree. It is common everywhere, and may be observed on dark nights throughout the winter. The female is wingless, and it is she who

crawls up fruit trees to deposit her eggs. That is why grease bands are placed in orchards as a preventive measure. The male is yellowish brown.

The magpie is a delicate black and white moth which appears in July and August and is often found in the garden, and the swallow-tail is a light yellow species with pointed wings.

The sulphur yellow wings of the brimstone have brown patches on the torewings and it flies in May and June, while the peppered moth has acquired its popular English name by reason of the peppery appearance of both pairs of wings. It should be looked for from July onwards.

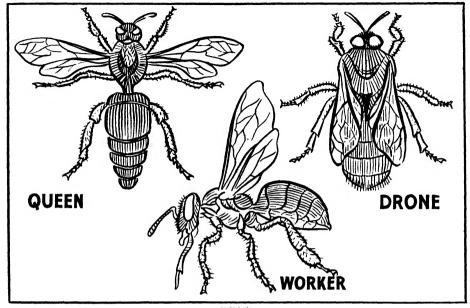
A very abundant moth on open spaces is the heath, which is on the wing in May and June. It varies in colour from greyish to dark brown, and the larva feeds on heather and other moorland plants.

The burnets are very attractive moths. One has five spots and another six. They are green, with five or six scarlet spots on the forewings, with red hind



WOOD ANTS' NEST

Large heaps like the above are often seen in woodlands and particularly in pine woods. They are built of pine needles and other vegetable matter, and are the nests of the large wood ant.



BEES

A diagram showing the distinctions between the queen, the drone and the worker bee.

wings, having borders of green. These moths have a dark body and long black antennae. They rest on grasses in a careless way and can be easily captured.

The goal moth has a fat, long caterpillar, reddish in colour, which eats its way into the heart of a willow tree. It has an unpleasant goat-like odour which accounts for its name. The imago is greyish brown and has a pointed extremity.

The wood leopard is well spotted with black on its whitish wings and also on the powdery head, and its larva, like that of the goat moth, is an internal feeder on fruit and other trees.

Lastly, there may be mentioned the ghost and swift moths. The former is much larger than the latter, and has obtained its name because of its silky white appearance. The female is yellowish and light brown. All four wings are pointed.

The common swift is a first cousin of the ghost moth, but much smaller. It is very abundant, and wherever there are grassy waysides, as well as other places, it is sure to occur from June onwards. The wings are yellowish to brownish, but the male has whitish markings on the forewings.

With the exception of the Diplera and Ilymenoptera, the order to which beetles belong contains more British species than any other. Some dwell above ground, others underground. Many fly, others keep to mother earth. Some, such as the large carnivorous water beetle, dwell in ponds and streams, whilst an equally ferocious-looking species is a vegetarian. Some are plain coloured, black, or very dark blue or violet, others are very pretty, such as the green tiger beetle.

Some are slow and lethargic in their movements over the ground, others are quick moving and soon make haste to hide when disturbed.

Some are abroad by day, others—like the droning dor beetle and cockchafer come out at night. The largest and handsomest of all is the stag beetle, the chocolate-coloured male of which has such a large head and jaws resembling antlers that it has been given the prefix of stag.

There are useful beetles that feed on decaying animal and vegetable matter—such as the burying beetle—but there are, too, enemies among them whose fondness for beans, grain, peas and other things is such that they must not be encouraged. There are as well, bark and wood borers who do incalculable damage, such as the elm bark beetle.

Then, too, there are the useful ladybird beetles, and the glow worm beetle whose phosphorescent light at night has such a pretty effect when seen under cover of darkness in a hedgerow.

Of the two-winged flies, or *Diptera*, there should be mentioned the bluebottle and house flies, bot fly, crane fly (or daddy-long-legs), dung fly, gad fly, humble-bee fly, hover fly, and gnats and midges. Those who spend their holidays on the Norfolk Broads, or where there is an abundance of water as in the Highlands of Scotland, do not need to be reminded how persistent are the efforts of the midges to annoy us, and it

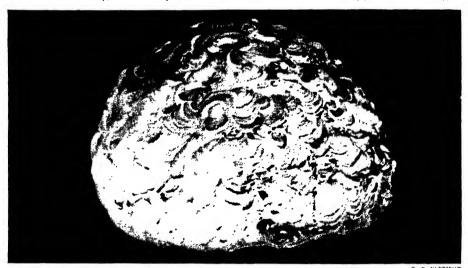
is not generally known that the common gnat is a mosquito.

This brings me to my last survey of insect life in Britain and the highest order of all, the *Hymenoptera*, which includes the ants (some of which are social and others solitary), bees, gall wasps, ichneumon flies, sawflies, and wasps.

Some of them have stings, others do not possess these weapons, and the communal instincts of such creatures as the ant, bee and wasp, as well as the economic uses of several of them, are too well known to need repetition.

The industry of representatives of this important order of insects will come under the notice of the least observant dweller in town or country, and even if one only considers the unaided construction of her nest by a queen wasp—to be enlarged to the size of a football at a later stage with the help of her large family -this one episode in the life and habits of these lowly creatures is of absorbing interest.

The queen wasp's first abode is only the size of a hen's egg. It is of fragile



WASPS' NEST

The queen wasp builds a nest of paper-like material which she produces by masticating fibres of wood. In the nest are numerous cells and in each of these is laid an egg which hatches into a grub. After feeding for a time the grubs spin a silky cover over the mouths of their cells. Later, when they have developed wings they bite their way out of their cells and are ready for work.

workmanship, but is calculated to withstand the elements until such time as her first brood hatch out when, with the addition of new and willing helpers, the nest is enlarged and new tiers of cells are added, to contain the eggs and subsequent grubs.

The wood ant and others construct hillocks of earth and sticks, and the excitement that prevails when one of these citadels is disturbed will no doubt be known to the reader. Each inhabitant seems told off for an appointed task, and as the pupa are carried away one realizes how anxious the adults are that their race shall be carried on.

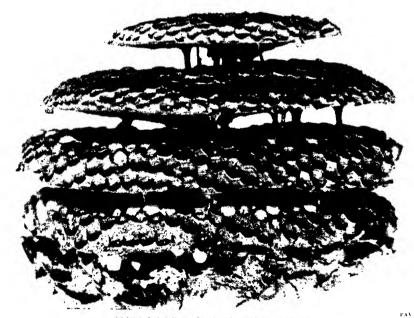
The hive or honey bee has in its community the queen or female, drone or male, and worker, or imperfect female. The latter are the nutses of the home, teeding the grubs with honey and pollen. The queen has a longer body than ber comrades, the drone has a stout body and large compound eyes, and the worker is the smallest of the three. Only the

queen and worker bees possess stings.

The ichneumons are useful insects as they deposit their eggs in the larvæ of destructive pests, and their young, when hatched, devour the body of the host, leaving the vital parts until the last. Some ichneumons are very small, others are two inches across the wings. They have, as a rule, long thin bodies, and very long legs and antennæ.

The last insects to which attention can be called are the gall wasps. These creatures are responsible for the nest-like structures seen on birch trees, as well as the production of the mossy growths on rose trees and the familiar oak apple.

If we considered in detail the life history associated with the oak apple alone we should find our time well and truly occupied, for it is one of the most romantic stories of insect life, but as I write the bees are uttering their cheerful monotones as they busily gather honey from the scented lime trees, and I would fain watch and listen to them.



INTERIOR OF A WASP'S NEST

The outer covering has been removed to show the layers of comb suspended one below the other. Some eggs are seen in the cells on the outer edges.

CREATURES OF THE SEASHORE

by L. R. BRIGHTWELL

TIFTY years ago one could scarcely dare to talk about seashore life, far less write about it, without being thought a bore, or possibly a little mad. At that time the public aquarium had scarcely been thought of,

and not one of the Fisheries Research Stations, which safeguard the world's harvest of the sea, had come into existence.

Now all that is changed. A great aquarium is universally voted "the best thing in the Zoo," and the importance of a nation's fish supply is obvious to all. We are beginning to realize that everything in the sca may be of vital importance to our national life, and that the most insignificant creatures of the seashore may ultimately affect the filling of our larder shelves. For our coastal waters are

the nurseries of our food fishes, and our shell-fish, oysters, crabs and so forth also largely live within the tidal area.

Although our home waters are chilly compared with those of a coral reef, they are crowded enough with life of every kind. They can show over two hundred kinds of fishes, several hundred sorts of clams and sea snails, over two

hundred different sorts of worms, more than fifty kinds of crabs and nearly four hundred species of seaweeds-mentioning only a few of the living things around our shores. To deal with all in a short talk is of course impossi-

ble, and to take a few in correct scientific order would sayour discouragingly of the text book. Moreover, one does not meet the animals in such an orderly tashion, but jumbled together as the surroundings favour them. So instead, let us follow the tide out, and see something of what it leaves behind as belt upon belt of the beach is uncovered; glancing at some of the more striking beasts as they occur; for no part

of the sea floor. SEA FAN not even the rolling shingle, is without its characteristic population. is really a colony of polyps. Stones brought down by rivers, and masses of rock fallen from the cliffs, have been rolled by the waves into smooth pebbles, sometimes piled on long banks skirting the coast. Though it may be uncomfortable for walking, it is worth exploring for the shingle marks that curious, salty, half-way house, where land and water meet, and the plants and animals of



Although it might be taken for a shrub, this growth really belongs to the animal kingdom. Like some coral to which it is related it

C.C.--H*

both blend together. Scores of flowering plants—sea poppy, thrift, samphire, viper's bugloss and the ancestral cabbage—contrive to find a foothold amongst the stones, and where there are flowers, insects are never far away.

All kinds of flies and beetles get a living amongst the rotting weed and uncatalogued refuse that marks high tide limit, and here we find a true sea animal,



COMMON SAND-HOPPER Myriads of these agile little creatures find a living on the shingle on the coast.

yet one that seems intent upon invading dry land—the ubiquitous sand-hopper, or beach flea. Everybody knows the animal—a little khaki-coloured crusty creature, that scuttles round and round in half circles, or takes amazing leaps. When present in numbers, its hosts make quite a hissing noise, and many of them gradually find their way into the picnic basket, teacups, trouser turn ups—everywhere.

The beach flea is not popular. All the same this little beast, which is not an insect but a crustacean, and a cousin of the lobster, has its uses. The odorescent heaps of decomposing weed stranded on the shore, magically disappear before its busy jaws. Twenty thousand hoppers have been found at work upon a single dead sea-urchin. The hopper moves about with such agility that the idea of

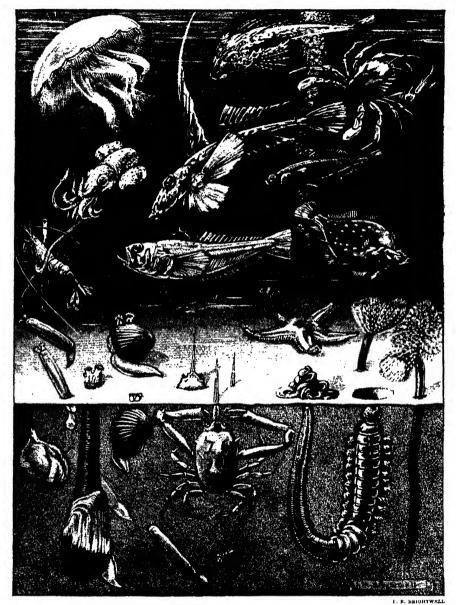
collecting it for sale, may strike one as less practical than counting the shingle whereon it lives, but still the hopper is in some demand—for scientific purposes, for bird food, and for feeding fish in large public aquaria—and must be caught. One old established firm in Sussex has the monopoly of this queer trade.

The hopper hunter, operating up and down the coast between Newhaven and Southampton, goes forth armed with scores of nets-like huge jelly bagsand a load of rough timber. The wood he uses to sink shafts, like miniature mine shafts, in the rolling stones, and in each shaft he puts a net, crammed to the mouth with fresh seaweed. Twelve hours later the weed is shaken into bins, and later the hoppers are ladled into a tin basin, mounted on a yard-high pole set upright in the middle of an old rain-water tank. Within the tin basin the hoppers dance a feverish dance, until eventually they hop themselves over the side and down into the tank, by which time they have shaken their many legs clean of sand and weed. Then off they go-in quart drums-by fast car to their various destinations. Time is precious. for the hopper, though unable to live long in salt water, cannot exist for more than six hours or so in a non-briny atmosphere.

Land and Sea Animals

Hobnobbing with the hoppers, but moving in more leisurely fashion, is a bulky woodlouse-shaped creature, the sea slater. Like the hopper, this is a sea animal gradually taking to a land life, and like the little rough winkles one finds high up the cliffs, is one of the tew sea animals that can get all the sea water it wants from a shower of spray.

With the first strip of sand laid bare we get some inkling of the overwhelming population of the sea. Nothing perhaps looks quite so destitute of life as a big stretch of sand at low tide, yet no tropic jungle compares with it for sheer mass production. The man out to dig for lug worms, clams, or sand eels gets some hint of this, for as the picture



TYPICAL SAND ANIMALS

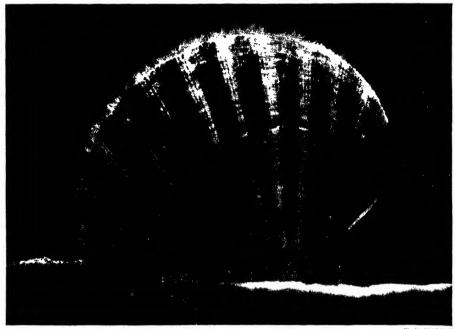
On a sandy shore there is an abundance of animal life. Above the artist has shown some typical specimens, including animals to be found swimming, living on the sea bed or buried in the sand. Swimming: jellyfish, cuttlefish, dragonets, swimming crab, weever. On sand: shrimp, razor shells, cockle, burrowing starfish, lug worm castings, plume worms. Buried in sand: heart urchin, gaper clam, razor shells, cockle, masked crab, lug worm, plume worms.

shows, the sand is often covered with tell-tale marks, by which the experienced know exactly what sort of animals lie hidden below.

The fisheries expert gets to know still more when he is engaged on what is known as "quantitative work," in plain English, taking a census of the sea. He simply takes a sample of sand or mud, by means of a "grab," and by counting

round dint, always found an inch or two from the squiggly pile of castings. The cast marks the sand which has passed through the worm's inside, the lug worm feeding just as does the common earth worm, and in the same way it circulates and purifies the medium in which it spends its life.

But the millions of lug worms, which one can find only by digging, are quite



SCALLOP

W. S. BERRIDGE

Shells of this animal are common objects on the seashore though it usually lives a little beyond the low-water mark. It is able to travel by opening and closing its shell, driving itself backwards by the expulsion of water. Along the edges of the fleshy mantle enclosing its body the scallop has numerous eyes, sometimes as many as seventy.

all the beasts it contains, can assess with fair accuracy the population of a whole beach. The figures so obtained are sometimes rather staggering. On some parts of our shores, for instance, the common lug worms may lie eighty thousand to the acre!

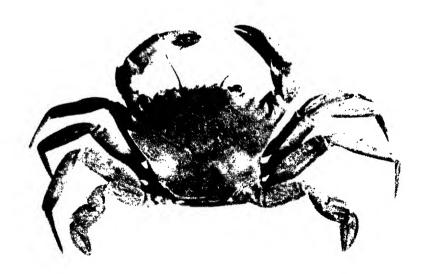
Everybody knows the little piles of worm castings so common at low tide. Each pile marks the tail end of a worm. The worm rests in a U shape below the sand, its mouth being just beneath a

a small part of the sand's underworld.

One often finds left stranded by the tide, whitish objects like slightly flattened egg shells, with a slit on the underside and a hole at one end. These were once living heart urchins, cousins of the starfish. Like the worm they burrow in the sand and "cat as they march," taking in quantities of sand, sorting out such food as it contains, and ejecting what is left. The greater number of sand dwellers, however, use



Crabs belong to a group of animals known as Crustacea, because of their hard crust-like shells. In the above specimen the stalked eyes are seen protruding.



BAY PAINER

SWIMMING CRAB

Like the shore crab, this species has five pairs of legs, the first pair being developed as claws or pincers. In the swimming crab, however, as will be seen in the above photograph, the ends of its fifth pair of legs are flattened to serve as paddles.

the sand mostly as a place of refuge. They lie buried in it securely hidden from focs, but rely upon the water above and the creatures swimming in it for food. Some of these creatures unconsciously advertise their presence as plainly as does the lug worm.

How the Clam Breathes

Here is a sort of keyhole mark upon the sand. If we dig well down below it, up comes a clam, a big shell-fish with its shell in two pieces, hinged together like a mussel and with what might be a miniature drain barrel sticking out at one end. Put the clam in a bucket of water, and on the water a little cigarette ash—and at once the drain pipe is explained. For now one can clearly see a strong current flowing from one of two smaller pipes contained in the main barrel. This is the clam's waste pipe—its sister tube sucking in sea water, which the clam breathes, and with it the tiny sea plants on which clam, cockles, mussels, oysters, and all such shell-fish, live.

This drain pipe of the clam also gives away the secret of how nearly all sand burrowers contrive to spend so much time buried alive without being suffocated. One and all, they must have some means of reaching the water above, and they reach it by a sort of periscope, usually a tube such as the clam's.

Digging for bait will bring to light all kinds of other sand hiders. On the south coast, we are almost sure to



SPINY SPIDER CRAB

With its slender legs this creature is not unlike a large spider in appearance, hence the name. The resemblance, of course, is only superficial. One obvious distinction is that like all crabs it has five pairs of legs, whereas spiders have only four.



EGG-CASE OF SKATE

This strange object, examples of which are found on the shore, is an egg-case of the skate. It may be distinguished from that of the dog-fish by its spiked corners.

unearth the masked crab, with enormously long claws and marks on his shell which exactly reproduce the features of Dickens's "Scrooge." This crab has no periscope like the clam, but contrives to breathe whilst buried in a most ingenious manner.

"Scrooge" has a pair of extremely long whiskers, each with a double row of stiff hairs. When the two whiskers come together they combine to form a four-sided tube, and through this the crab pumps down clean water to his gills, and pumps up again the stale water robbed of its oxygen.

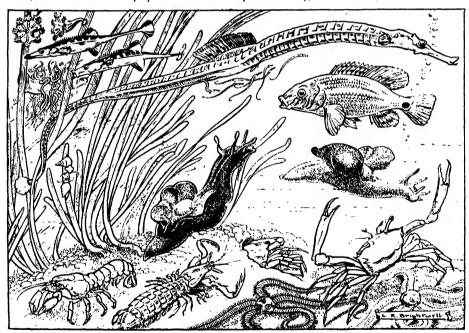
Still following the tide out, the sand hiders become more numerous and varied. Here is quite another class of sea worms, worms that use the sand for building purposes. Often the seaside visitor must have noticed wide areas covered with what looks just like corn stubble, and explained it possibly as a bit of old basket. But each stubble stalk is the home of a sea worm, which, using the sand grains as bricks, gradually builds a round tower like a very long and slightly pliable factory chimney round his delicate anatomy. There are scores of different kinds of these tubebuilding worms around our shores, and the making of their homes has only been unravelled during the last few decades. It involved scientists keeping the worms in aquaria, and sitting by them, days and nights on end, in order to catch them at their miniature, but most intricate, building operations.

To the ordinary seaside visitor most of these worms only reveal themselves by the fragments of their tubes cast upon the beach. Our more muddy southern shores sometimes yield a big U-shaped tube, nearly a foot long by an inch or so wide, and its owner is so extraordinary as to be well worth a search—at low tide on a darkish night. Then the worm reveals its whereabouts by a halo of ghostly bluish light, which shines above the entrance to its humble home. If this creature, the parchment tube worm, is dug out and put in a bucket, it gives off a light strong enough to read by. Just what the object of this light may be is at present a mystery. It certainly does not protect the worm, but rather advertises its whereabouts to foes, such as the cel, who knows enough to follow the blue light and then seizes its unfortunate owner by the head, and so the illuminations come to a sudden end.

The tide at last reaches its limit, but one can still explore the sand some way farther, by paddling, and what better than to combine pleasure with profit, by hiring one of the big shrimp nets one can always get—at the rate of sixpence a tide—and shove it before one through knee deep water. Then, indeed, one gets an idea of the populace beneath

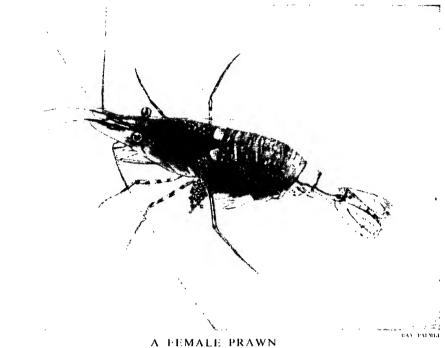
the lifeless looking sand. The first haul will bring up not only worms and clams of all kinds, but swimming crabs and such fish as gobies, infant plaice, soles, and turbot, for these shallow waters, inaccessible to large and hungry adult fish, are the nurseries of the babies, the forcing frames of our future dinners.

When shrimping like this in shallow water, it is just as well to wear shoes of some kind, for amongst the innumerable fish that lie buried in the sand, with only their eyes showing, are some that demand careful handling. Our sandy bays often swarm with two curious little fishes, the dragonet and the weever. The dragonet has a three-bladed knife set on either side of its head, which can inflict painful cuts. But the weever is worse, for the spines upon its back and gill-covers are hollow and connect with poison glands, exactly as do the fangs of venomous snakes. little farther out lurks the still more poisonous great weever, and both this



LIFE ON A GRASS BANK

On grass: bell jellyfish, opelet anemone, top shells. Swimming: fifteen-spined stickleback, pipe-fish releasing young from pouch, curasse, sea-hare. On ground: sea-hare, and from left to right: burrowing prawn, mantis shrimp, brittle starfish, angular crab.



Most of us are familiar with this crustacean, if not in its native haunts. The above photograph depicts a female with a cluster of eggs on its underside.

and its little inshore relative can set up most painful inflammation, which is best allayed by hot fomentations, or immediate application of some alkali, such as animonia, or the homely blue-bag. So real a menace are these fish that the warning, "ware weevers," is displayed on some piers and promenades. It is the more needed since weevers are excellent eating and so likely to be handled; indeed, on the Continent, where they are a part of the fishmonger's regular stock-in-trade, the law enforces removal of the poisonous spines before the fish are exposed for sale.

In pre-war days glass and choice china almost invariably travelled packed in what most people took to be some kind of wood shavings -long, thin ribbons, very tough and springy and of a curious dark brown colour. Not one recipient in a hundred guessed this stuff to be a seaweed, yet such it was, and in its way unique. For the seaweed, or eel-grass,

wherever it grows makes a home for myriads of animals, and forms a vast inshore nursery for fishes, besides being the prawn fisherman's paradise.

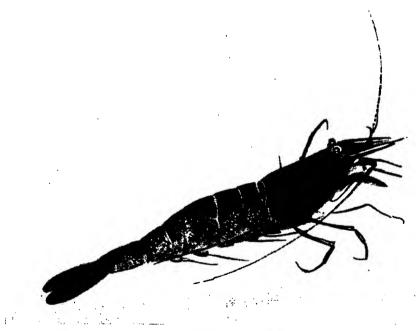
Eel-grass is a freshwater rush that has taken to salt water. It is the only sea plant with a flower or true roots, and it forms long banks of emerald foliage at river mouths, or along the shore, not more than a half-mile or so from land. There are famous grass banks stretching all along the Sussex shore, and they have been one of London's chief prawn supplies for many years. The grass roots so firmly bind the soil as to hold it together, forming huge crescentic ramparts, and here live a swarm of burrowing animals whose existence few suspect. Only a big storm, or an hour's hard spadework, can bring them into view, unless one cares to visit the bank by night at low tide, when an electric torch or lamp will draw these underworldlings from their lairs. The angular crab, that might have come straight from a tropic isle, the burrowing prawn, and the mantis shrimp are all to be found on the grass bank. The mantis shrimp has the front part exactly like that of the tamous insect known as the "praying mantis," having the same spine-covered "fold up" fore legs that seize upon any passing animal, and hold it as in a vice.

Another strange grass bank burrower is the snap lobster. This looks very like a shrimp-sized common lobster, but behaves quite differently. The finger of the big claw has a spring trigger attachment, and when alarmed, the animal literally snaps its fingers at you, making a report quite as loud as a man can by striking two fingers of one hand upon the palm of the other. Quite apart from these night walkers the grass bank fairly hums with life, and in broad daylight is as full of varied activities and startling sights as a three-ring circus.

Crawling amongst the grass roots or

between the bank is the sea-hare, a big purple-brown sea-slug, anything up to six inches long, and, with its humped back and flapping horns, mildly suggestive to a fevered imagination of a crouching hare. Much more is the beast reminiscent of a miniature "moon calf"—the gigantic monsters in H. G. Wells's First Men in the Moon. The animal lurches slowly over the shining gravel, biting off bits of sea grass half an inch long, and swallowing them whole.

Wholly without weapons, the sea-hare still has an effective defence. Prod it with a stick. At once there begins to ooze up from its back curling wisps of royal purple. The beast might be on fire and belching purple smoke, for the colour grows in volume and intensity until the world for a yard around is literally purpled out. Slugs, stones, shells and grass all vanish, and remain hidden for ten minutes or more. Then slowly the heavy dve begins to fade, first to mauve,



COMMON SHRIMP

Like the crab, the lobster and the crayfish, the shrimp belongs to the group of animals known as Crustacea. In the above photograph are seen the curiously-shaped forelegs and the long antennæ,



A ROCK POOL

The retreating tide often leaves behind little pools in rocky hollows in which picturesque forms of sea life may be found. Here is a pool occupied by corals and sea anemones.

then a pale claret, and when at last the sunlit sea bed shows again, all is as it was before, save that the hare is only represented by its tail-tip slowly vanishing into the cover of the nearest thicket.

Every part of a grass bank has its characteristic populace. The waving grass ribbons, each about as wide as one's little finger, are studded with tiny top and pheasant shells, gelatinous egg masses of various animals, or intertwined with what look like other grass blades of extra thickness. These last, if handled, turn out to be not grass but fish, very feeble in their movements and as hard to handle as so much copper These are the pipe-fishes enormously elongated sea horses. They anchor themselves to passing weeds, and drift helplessly with the tide, relying for safety on their bony armour and their wonderful camouflage. Feeble and inconspicuous, the pipe-fish holds an

honoured place amongst those selfsacrificing males who take upon themselves half the responsibilities of harassed motherhood.

Like the sea horse, the male pipe-fish gathers a hundred or more eggs beneath two flaps of skin that fold one upon the other, recalling the voluminous waistcoats of Regency days. Here the family remains until it is due to hatch, when by a series of graceful bows, the fond parent causes his waistcoat to bulge, and the babies sail forth, each a miniature replica of its devoted sire. Self-helpful from the first, they follow the parental precept of clutching at the nearest support by their prehensile tails, and the nearest support in this instance being father, he wears a festoon of his own infants for several days to come.

Security has no meaning beneath the waves. Before they are an hour old some of the infant pipe-fish are sure to come in contact with what might be a



HERMIT CRAB

This animal has a strange habit of adopting a shell as a movable dwelling. The above photograph shows a crab occupying a whelk shell on which there is growing a sea anemone.

rose-pink wineglass—about an inch across -clinging by its "stand" to a grass blade. But the glass is in reality a species of anchored jellyfish, and its rim is set with eight clusters of rosy buds, each a battery of stinging cells, ready to paralyse all they touch. The bell jelly takes toll not only of baby pipe-fish, but the young of the sticklebacks, gaily coloured wrasses, swimming crabs, prawns, and the hundreds of other creatures swarming on the grass banks, through which the prawn fisher loves to shove his ten-foot net. When one remembers that every fish, crab, and jellyfish is also literally a net, a net that works non-stop the clock round, one can only marvel at the prodigality of life which still contrives to hold its own against such wholesale slaughter.

The longest stretch of sand eventually gives place to rocks, and wherever rocks are, we can, even on the most exposed coastline, find life speeded up to fever

pitch. Rocks offer animals shelter in so many different ways. Creatures cling to them, hide beneath them, creep into their every chink and cranny, and even tunnel deep into them.

Close inshore every rock is crowded with barnacles-the little tent-shaped shells that bathers hate, and some people think are "limpets with their tops rubbed Actually the open top of each shell is guarded by a set of tiny sliding doors. Most of us, when sitting alone upon the rocks on a perfectly still day, have been conscious of a faint sizzling sound, that fills the air and seems to come from everywhere. We are really listening to myriads of these little doors, restlessly creaking on their hinges. The barnacle starts life as a minute, free swimming creature, suggesting a blend of flea and lobster. Then a day comes when it anchors itself by the head, grows a set of stony walls around its body, and keeping only its legs tree, uses them to

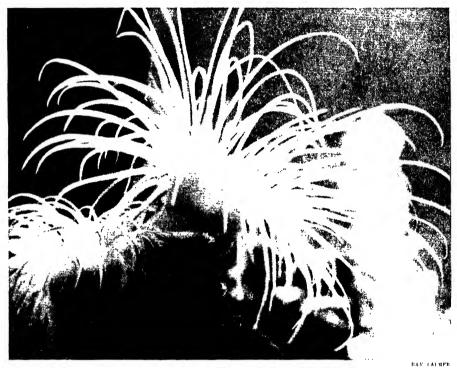


BARNACLES ".

Above are a group of stalked barnacles. They begin life as free swimming creatures, but later develop stalks by which they attach themselves to some object. rake in food through the top of its shell. One can often see the barnacles thus feeding, on some rock still covered by the tide.

Half the most exciting little seashore dramas are played out under water, and when the wind ruffles the surface they are of course largely invisible. Now in the early days of natural history, when —and doesn't advertise one as a "bug hunter."

Amongst the legions of the barnacles, and often overgrown with them, there slowly goes on its way the solitary limpet. Beginning life, like the barnacle, as a free swimming creature, it soon takes to a semi-sedentary life, and not for nothing has it carned fame as a sticker. If a wire

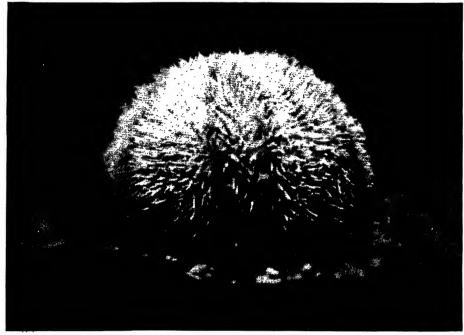


SEA ANEMONES

Numerous specimens of these flower-like animals may be found in rock pools. The waving tentacles are furnished with numerous sting cells, by means of which tiny animals are captured to feed the anemone.

anyone caught studying seashore life was regarded as "mental," the naturalist was invariably represented going about with a mass of apparatus lashed to him, like a soldier in the last war. The only gadget needed to see seashore life is a water-glass—say a cigarette tin with a piece of glass fitted into its base—the metal being cut away of course. This does away with surface ripple, and gives a clear view of all ahead. It can be carried in the pocket

hook is fixed into the top of its shell and a spring balance applied—even a limpet only an inch across registers a pull of thirty pounds. The limpet is a homing beast, between tides always coming back to the same spot to roost, but at high water strolls abroad to browse on the bright green weed (seed lettuce), which makes the rocks so slippery. This weed also feeds the common periwinkle, living just a little farther out from shore, and



EDIBLE SEA-URCHIN

W. S. BERRIDGE

The sea-urchin is a near relative of the starfish, with which it has some similarity of structure. The numerous spines with which the body is covered serve as forceps and pass on particles of food to the animal's mouth.

it will be noticed that the population becomes more crowded with every step we take seawards. The winkle's shell offers another solution to that eternal problem of the sea animal—a search for a home.

When the winkle has lived out its five or ten years of life, its snug and solid shell is "to let"-but not for long. Soon there comes the hermit crab, looking like the front half of a lobster, and carrying on his back a sea-snail shell of some sort, often the worse for wear. He seizes upon the empty winkle shell, turns it this way and that, thrusts his claws deep into its innermost recesses, and then—quicker than the eye can follow, whisks himself out of his old home and into the new. There he will stay, until his growing bulk dictates another change of residence, and so on and so on, until when ten years or more old, he finally settles down in the largest

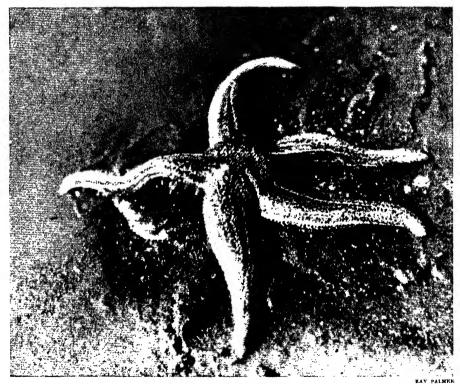
whelk shell he can find. In the tropic seas, where whelk shells sometimes run to two feet long, the hermit crab swells proportionately, a most impressive animal.

The hermit crab is the low comedian, the knock-about of the seashore, and if a pair of hermits, and a selection of empty shells, are put together in a basin of sea water, an hour's entertainment is assured, for a hermit in search of a home, is like a lady trying on hats. Even when suited he may regret his choice, and go back to the old love, only to find a brother hermit has appropriated it—and then the trouble really starts.

Edging along the rocks, in the wake of the retreating tide, we meet some further complications of the hermit's daily round. In deeper water his home is soon shared by lodgers. Barnacles and sea ferns grow upon it, trebling its weight, and then comes the big hermit

crab anemone. This fixes itself to the shell, and shares the hermit's meals, but in return, scares off hungry fishes, for its "petals," like the "clapper" hanging beneath a jellyfish, are full of stinging cells. Another lodger which, however, gives nothing in return, is a worm, as long and thick as a pencil, that lives in the spire of the shell behind the hermit, and when a meal is toward, comes down to dinner, and snatches titbits from between its landlord's jaws. At times the lodgers may become so numerous and grow so fat upon their host's bounty, that he is fairly hounded out of his own home, and forced to seek another, less popular.

The hermit crab is not the only one that builds for others than himself. Millions of desirable residences are perpetually being carved out of the solid rocks, not merely by the action of the powerful waves, but by the ccascless labours of a very feeble looking shell-fish. Many a seaside visitor has observed that the great stretch of limestone reefs and boulders stretching from Brighton to Newhaven resembles, throughout almost its entire length, so much gruyère. Some of these holes hide crabs and worms of all kinds, even fish, but the rightful owner turns out to be-after some searching-a shell-fish, whose two delicately sculptured, pure white shells, each some three inches long, have been well named "angel's wings." The angel's wings clam, or piddock, is a soft, squashy looking creature, seemingly quite incapable of making burrows that might be the work of a pneumatic drill. But



COMMON STARFISH

A familiar creature of the seashore with its five radiating arms. Down the centre of cach arm are a number of suckers or tube feet by means of which the animal is able to move. The starfish is regarded as a nuisance in oyster beds for it preys voraciously on the oysters,



MERMAIDS' PURSES

d on the seashore, and funcifully termed merm

These curious structures, found on the seashore, and fancifully termed mermaids' purses, are really the egg cases of the dog-fish.

the sculptured shells act like a file, when ret in motion by the piddock's muscular foot, and by keeping up a gentle but incessant rasping action, the seemingly impossible is accomplished.

A relative of the piddock, known as the shipworm, you may find tunnelling any wooden breakwater or jetty. There is no mistaking the creature, for, although the actual shell is no larger than a peanut, the burrow may be a foot or two long by half an inch wide and lined with shell. No timber can stand for long against the shipworm, and before the days of metalplating at sea, more British warships fell to the shipworm's drill than ever they did to the opposition's guns. The shipworm, and other timber tunnellers, finally put Drake's Golden Hind out of action.

A curse to the maritime builder, the piddock is a good friend to the seashore house hunter. Before much searching of the piddock's subway system, one is sure to come upon one of our commonest

coastal fishes, the blenny. It is a bigheaded, pugnacious little beast, and as with most sea animals, its chief anxiety, apart from the next meal, is to make sure it is safe from a rear attack. To this end it likes to get its tail half safe in some snug crevice, and so present a bold front to a dangerous world.

Like so many creatures living close inshore, the blenny is half-way to conquering the land. It can be quite at ease for half a day, stranded high above low tide level—even in an old knot-hole at the top of a breakwater, and sometimes scuttles about the rocks more like a lizard than a fish. Here amongst the boulders is the place to find all kinds of fish eggs-the blenny's, each about the size of a pin-head, are placed in an even layer on the underside of a stone; the bull-head's, massed together in a clump about the size of a walnut. These eggs are pearly white, but as they develop turn green, and in this stage can be

induced to hatch by merely drying them for half an hour. When put back into sea water, the babies emerge almost at once. Each infant fish is quite transparent, so that under a lens one can not only see its heart pumping but even its tiny blood corpuscles, rolling and tumbling along like boulders in a torrent.

These inshore fish nurseries are quite modest affairs by fish standards, the eggs seldom numbering more than a few hundreds, instead of, as in deep sea fishes, thousands or even millions. The families are small enough to be guarded.

Male Guardians

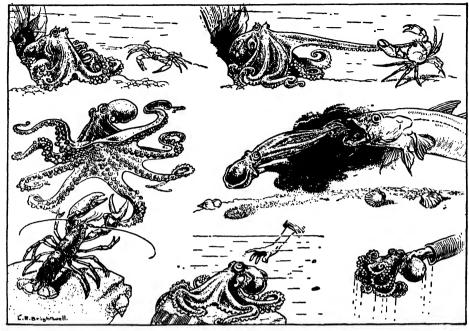
As a rule the guarding is undertaken by the male fish, and although he devotes his whole energy to the business, seldom stopping to feed and ever ready to sacrifice his life in the rising generation's defence, his efforts must be often wasted. All rocks swarm with enemies. There are starfish of all kinds that will tackle anything, and the round spine-covered sea-urchin that is just as easily pleased. The sea-urchin, though looking like a spiny nut, and as incapable of action as a nut, is really a starfish, with its five arms bent over so that their tips meet, and are then welded together.

Put one of these "sea-eggs," as they are called, in a rock pool and you will see that thousands of glassy feet appear all over the creature, and slowly and deliberately march it up the walls of the pool, as a fly might march up a window pane. Not only this but the whole structure is covered with pincers and forceps, each mounted on a pliant stalk, which grasp at scraps of food and passes them on to the invisible mouth. If the fish eggs escape these enemies, or fish and crabs, there are the legions of hungry dog whelks eager to devour them. Failing fish eggs, the dog whelk drills a neat hole into the nearest barnacle or limpet and eats out the inmate piecemeal.



SEA CUCUMBER

At low tide animals known as sea cucumbers may be found on the sand. These relatives of the starfish are not unlike large brown or black gherkins. Some species spin threads with which they are able to bind such enemies as lobsters.



THE COMMON OCTOPUS

At top left an octopus is seen at the entrance to its lair, and right, capturing a crab. Below, descending upon a lobster, and right, escaping from pursuing cod by means of ink cloud. Bottom right shows how to handle an octopus.

The farther the sea retreats, the more varied and spectacular the creatures it uncovers. A spring tide, i.e., at new or full moon, in summer-time, may show us even the octopus at home. To most people the octopus marks nature's limit in the bizarre and the macabre. But far more nightmarish is the cotton-spinner or black sea-cucumber.

This relative of the starfish looks exactly like a big brown gherkin, and although able only to effect a crawl, and to feed on minute life, is well able to hold its own against so powerful and active a foe as a big lobster. After passively accepting quite a lot of handling and hustling, the cotton-spinner quietly pours forth from its tail end a tangle of white threads that run out like the "farewell" streamers thrown from a liner's deck. These streamers bind the lobster's legs and claws and choke his gills. So having said its say, the "gherkin" glides away leaving the lobster to his fate.

And here let me once more debunk the octopus. Never a summer passes but the Press treats us to an absurd account of this much maligned animal. The octopus is a relative of the whelk and oyster, despite appearances, and it lives exclusively upon shell-fish, principally crabs and lobsters. It clings automatically, with its three hundred or more suckers, to anything it touches, but although it may chance to lay hold upon some unwary bather or wader, it has no idea of man-hunting, and its chief danger lies in its effect upon the nerves of the human encountering it. Grasp the beast firmly at the junction of its head and bag-shaped body, and the biggest octopus becomes helpless and is put out of action forthwith.

Warm weather may bring numbers of octopuses northwards—but they always go back to Madeira with the first hint of autumn. On these migratory swims, vast numbers are caught in the Channel Isles

and all along the French coast, for market. Octopus flesh is pearly white and tastes exactly like lobster when stewed.

But the living beast is one of the star turns of the shore. It can swim backwards at arrow speed by blowing water through its siphon pipe, can crawl like a huge spider or, rising in the water, descend spread-eagled on its lobster victims. Twenty crabs can be caught and stowed away till wanted amongst its coils, and are then disarticulated as neatly as a mechanic takes down your car engine.

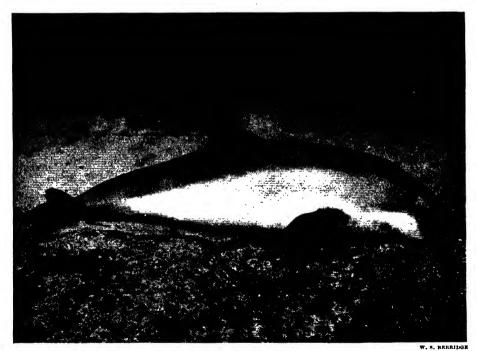
Brainy Octopus

Normally the octopus, when attacked, is just a passive resister, but when hard pressed, say by a cod or conger, it takes cover by squirting out a cloud of best artist's sepia. The octopus is a brainy beast—and a good mother. The female lays several score eggs—rather like broad

bean pods—and tenderly nurses them for some weeks by just blowing water over them. Finally when the babes appear they look very much like overgrown house spiders, and soon set about keeping the surplus crab population in check.

As a quick change artist the octopus is without equal—passing from one tint to another instantaneously to match the background of the moment. It would never suffer the fate of the classic chameleon that, you remember, burst when placed upon a Union Jack.

And here we may suppose the tide turns and our rambles, for the time being, end. The longest tide gives but a short time to explore half the wonders it reveals, which possibly is why shore hunting has nowadays so many votaries, increasing considerably year by year, and why they never tire of their hobby, once they have decided to adopt it.

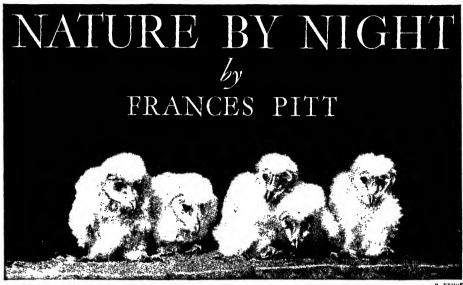


A PORPOISE

The porpoise, a relative of the whale, though not a seashore animal, is frequently seen in small herds round the coast. It feeds on mackerel, pilchards and herrings. Above is a specimen which has been washed ashore.



A LONG-TAILED FIELD-MOUSE TAKEN BY SURPRISE.



THEN the light begins to fade, as the shadows lengthen across the turf, as the sunset hues flame upon the north-western sky and the first star begins to twinkle overhead, the creatures of the day disappear and those of the night prepare to come forth. All day they have remained in hiding: the mice in their holes; badgers and foxes in their secret retreats; the bats in hollow trees, under the rafters of the houses, and so on; the brown owls in the heart of the most shady trees and the barn owls in the barns; to say nothing of the toads and other lowly creatures under stones and in similar hiding places.

The first of the night-time beings that show themselves are usually the bats. In that twilight hour which, in my native county of Shropshire is called "the edge of night," they tumble forth from their dens, from the old woodpecker's nest in the ancient oak tree, from the church tower and from beneath the roof of the barn, to race on slender wings through the dusk. Fluttering shapes are visible for a moment against the sunset sky, to vanish the next instant in the shadows, and a second later brushes past one with an eeric sound of rustling wings.

Although we always think of bats as

lovers of the dark, strictly speaking they are not animals of the night, for their chief times of revel are at dusk and dawn and many of them return to their dens during the middle of the night.

Now the owl does merit its title of "bird of the night," so far, at any rate, as the tawny or wood owl is concerned, and for most of us it is "the owl." That long - drawn "tu-whit, tu-hoo, hoo-oo-ooo!" is one of the most characteristic cries of our night-time woods. It echoes through the darkness and trembles away over hill and dale, seeming at once one of the most melancholy and vet most beautiful of sounds. Owl after owl takes up the challenge, hooting rings out from far and wide, until the very dome of the heavens seems vibrant with the voices of the night.

Night Sounds

November, particularly towards the end of the month, is the time when the dark hours are particularly full of sounds, for then it is that the foxes begin their love affairs. I remember a damp evening when I went forth to listen for news of the creatures of the countryside. It had been a rainy day, but a steamy mist now enveloped fields and woods. However,



This fierce looking animal is nothing more than a but perched on a toadstool and photographed at close quarters.

a rising moon spread a ghostly light through the vapour and the night was by no means a dark one.

That November night, although damp and misty, pleased the owls. They were hooting everywhere. One floated ghost-like on its downy muffled wings over my head, took perch on a bough nearby and was silhouetted against the moon with its large misty silvery halo. I saw the bird extend its head, I saw its throat swell as large as a hen's egg, and a long-drawn hoot rang out very clear and near.

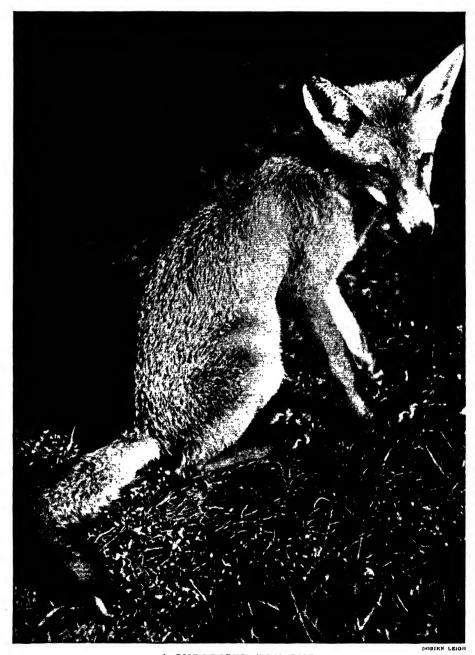
But I forgot the owl, I forgot all birds, when, as the hoot died away, a short gruff bark, thrice repeated, came to me from the nearby wood. It was the bark of a fox. The male fox calls thus. He does not go on barking like the dog, but just utters two or three "wout! wouf!" sounds, stops, waits, and then repeats them.

Hardly had this fox barked than another replied, then a third and a

fourth. I could hear four foxes in four different places. There was a pause, a silence during which no sound disturbed the stillness and not even a twig rustled on the trees, and then a horrible scream, a tragic heart-rending sound rasped through the night.

It was but the vixen answering love call with love call, yet it seemed as if uttered by a thing in torment. Once again the lady raised her weird lament, her swains answered, and then all remained silent, the moonlit mists enveloped not only the vale but the foxes and their affairs, and I was left to imagine the joyous courtship going forward in the November woods.

Here, I may say, really dark nights are exceptional. The illumination may be so poor as to be useless to our eyes, but it will be sufficient for owls, cats, foxes, and such other birds and beasts as have eyes adapted for making the best of the twilight and darkness of winter nights.



A SURPRISED FOX CUB

An excellent night photograph of a young fox cub. The cubs are born about the end of March and for the first few weeks of their existence are helpless and are suckled by the mother. During the summer they learn to feed themselves and catch rats, young rabbits and game birds to meet their appetites.

Owls in particular have eyes evolved for this purpose, though this does not prevent them seeing in a good light. There is an old idea that owls are blinded by the sunlight, but this is pure rubbish. They can see as well as we can—if not better - in the brightest light. The notion has probably arisen from the way a tawny owl, surprised at its roosting place, will sit up, its feathers drawn tightly about it, and blink at the intruder. The bird looks as if dazzled, but the blinking is

really dark nights, when everything is completely blacked out, these come but seldom, and when they do they are usually the result of dense fog, vet whatever the cause the effect is the same, namely, a complete cessation of movement of every description. No owl hoots, no fox stirs, badgers remain at home, otters stay in their holts and all wait for visibility to improve, for not one of them can see in absolute darkness, not even wandering puss, despite her



A HUNTER WITH ITS PREY

This photograph taken at eleven-thirty at night shows a barn owl just returning to its home from the hunt and bringing in a dead rat for its young.

really a nervous gesture and has nothing to do with its ability to see.

My pet tawny owl, "Old Hooter," whom I had for many years, loved the sun and would sit and bask in it for an hour or more. No, it is not dislike of daylight, or inability to see in a strong light, that makes owls birds of the night, but the fact that they can get a better living during the dark hours for there are then so many more small rodents about.

But with regard to the question of

proverbial powers in this direction.

And apart from nights of real blackness there are evenings which to us, with our limited senses, seem very nice ones, but which nevertheless are unpleasing to the wild creatures. For some reason or other they are quiet and subdued. There is little to be heard, hardly any voices are raised, and he who waits and watches gains little news of nature on this night. The next night may be precisely the opposite. Without any difference in weather or atmospheric



TAWNY OWL

A tawny owl surprised whilst squeezing into its nesting place in a hollow tree.

c.c.—1

conditions that we can discern, it is one of great difference for animals, and they are full of joyous excitement.

November nights often thrill the listener with other sounds, particularly on those evenings of oncoming frost, when the violet dome of the sky is brilliantly powdered with stars and the air strikes the cheek with an icy touch. Then come weird wild cries, as if spectral hounds are racing in full chase across the heavens, their voices now rising, now dying away and now coming again, so that each second it seems as if they must overtake their ghostly quarry.

Wild Geese

The spectral pack is solid enough in reality, being made up of birds, of wild geese, flying through the night, and crying as they fly. I believe the many legends extant of ghostly horsemen and hounds that hunt by night all have their origin in the houndlike quality of geese voices when heard overhead, particularly

in the winter when there is often considerable migration of wild fowl from one resort to another, a migration which is largely undertaken during darkness.

It is curious how birds like to travel at night. The great tourist movements of spring and autumn, when myriads of birds journey northwards and return southwards, are often undertaken under cover of darkness. Species that under ordinary circumstances rest quietly at night, roosting in some snug place with the beak under their shoulder feathers. no sooner feel the travel fever urging them to be up and off than they forget the dark hours that are those of rest for them. Away they go, steering by some means unknown to us, keeping their course as well by night as by day.

Night travel sometimes entails disaster for migrant birds, particularly when they reach the neighbourhood of a lighthouse. Its beams dazzle and bewilder them. They flutter up the radiant path until they fly into the window, bump against the glass and fall stunned. Misty



LITTLE OWL

A flashlight photograph of a little owl returning from a foraging expedition and caught at the entrance to its nesting hole in a rabbit burrow. In its mouth is a cockchafer,



BATS IN THE BELFRY
A group of bats, clinging to the beams high up in a church tower.

nights are peculiarly fatal. If there are bird-rests around the light the victims may recover, gather their wits together and fly on, but if no rests are provided and if they fall into the sea, that is an end of the matter.

From so tragic a topic let us turn to the more pleasant subject of birds that habitually make the night their busy time, such as the nightjar, which haunts the ferny slopes near the wood and then chases the moths and other insects of the dark hours.

Goatsucker

A strange-looking creature, the nightjar, or goatsucker (so-called because in days of old it was thought to suck goats), comes to us in the spring with the other homecoming migrants, and soon a queer purring sound is heard at twilight from common and wild ground. This sound goes on and on, now seeming close at hand, now here, now there, for it has a ventriloquial quality that makes location of the bird extremely difficult, but we may catch a glimpse of a long-winged, dark hawklike form, that darts, turns, twists and swoops through the shadows.

The nightjar is chasing moths, which its wide gape helps it to catch as they fly. I have said that the bird is a peculiar looking creature, its mouth being of remarkable width, and this no doubt gave rise to the myth about it sucking goats, a varn that has long been discredited though a similar story concerning an animal of the night, namely the hedgehog, is still believed in some quarters. Many persons remain convinced that the poor little prickly " urchin"—to use its countryside name -makes a practice when it wanders forth at night, of seeking the cows as they lie asleep in the meadows and robbing them of their milk.

As the hedgehog has a wonderful array of sharp teeth, excellently adapted for dealing with slugs, worms, dead mice, rats and other carrion, the cows would not, we may surmise, suffer its attentions gladly, even supposing that the hedgehog had any intention of despoiling them by unlawful means.



NIGHTJAR AT NEST

This curious bird, also known as the goatsucker, makes a weird purring cry at night and seems to be something of a ventriloquist for it is difficult to locate the source of the sound.



THE HEDGEHOG

This animal with protective spines feeds on worms, slugs, dead mice and other carrion.

There is, however, a baseless idea that it robs cows of their milk.

But to leave the hedgehog for the moment and to return to the nightjar. I have said that it is most frequently met with on fern-clad slopes near the woods, hence it is sometimes called the fern owl, yet the place which the word "nightjar" always brings to my memory is an island off the Welsh coast, namely Ramsey Island, where a friend and I once spent a night out in search of shearwaters, which only visit their nesting places when the cover of darkness is upon the earth.

It was a glorious summer night, peaceful and beautiful beyond words. The sea lay becalmed and as still as the proverbial millpond, faintly rose-coloured on the north-west with reflection of the sunset, and a mysterious silver elsewhere, while here and there winked lighthouses, their beams flashing up, dying away and reappearing.

For all its magic stillness the night felt alive. The waves moaned softly on the rocks and a lapwing wailed, which seemed to be a signal for the nightjars, as one instantly flew up, swooped past us and began to "churr." There were a pair in residence on the tern-covered higher plateau on the western side of the island, a most active couple they were Throughout that summer night they rarely stopped their noise. It was only when the greenish yellow light that had appeared to the south-east flared up the sky in the glories of sunrise, that they ceased their incessant cry. Then, too, I had no doubt they had gone to rest for a while.

During the day the nightjar takes seat on a branch, a stone, or some other object and there remains so still that it is extraordinarily difficult to discover. Its plumage and markings harmonize perfectly with its surroundings; indeed, it looks so like a piece of stick that it is almost impossible to believe that it is truly a live bird, but with the lengthening shadows of evening it comes once more to life, and flies off to sing its peculiar "song" again.

Yet, however persistent the nightjar

in its night-time discourse, it does not equal that most undauntable of birds, the corncrake. This member of the rail tribe, which is also known as the landrail, like the nightjar is a migrant, coming to us in the spring from Northern Africa and the basin of the Mediterranean. Formerly, it came in great numbers, so that every field held corncrakes, which ran about in the grass and kept people awake at night by this harsh unmusical, persistent, monotonous craking. Now, alas, it is rare to hear a corncrake in the southern parts of Britain. It is only in the north that it still occurs in any numbers, as, for instance, on the islands of the Orkney group, where I recently had the pleasure of hearing the wellremembered voice.

Why Species Wane

Why the landrail should have sunk from being one of the common birds of the countryside to a rarity of the northis another matter, and a question not easy to answer. The blame is often laid on the modern system of agriculture, its machinery, the earlier cutting of the crops and the consequent destruction of nests and young in the said crops, but whether this alteration is the real factor I cannot say. Species wax and wane, become plentiful and fade away again, and it is hard to discover the causes.

All we can say with certainty about the corncrake is that, in considering nature at night in Britain, we need not hope to hear much of it. There is another bird, however, that we may expect to hear throughout the open country, and that is the lapwing, peewit or green plover.

To call the lapwing a bird of the night may at first seem surprising. It is much in evidence by day, whether wailing "pee-wit! pee-wit!" over its nest in the spring, or manœuvring as a member of a great flock over the arable ground in winter, but it certainly does not rest the night through. I have often wondered if the peewit ever sleeps.

During that lovely night when two of us strolled about the shadowy slopes of the Island of Ramsey and listened to the purring of the nightjars, a lapwing was constantly flying around and uttering its plaintive call. And I have, on other occasions, when out in the dark, heard the peewits lamenting.

In sober fact 1 do not think this bird should be classed with the night creatures, because it is so active all day, yet its behaviour after dark is very different from that of the birds which go properly to rest. Blackbirds, thrushes and other hedgerow species seek comfortable sheltered twigs on which to roost; starlings go off in great flocks to chosen spots, such as thick copses or London's buildings; pheasants fly up and perch in the trees; partridges cuddle together in a family party on the ground; and seabirds, such as gulls and gannets, settle somewhere and sleep soundly until the light returns.

That night on Ramsey Island I only once heard a gull call, and when walking along the cliff head I heard a gentle sleepy murmur coming from the bird ledges below. This sleepiness of gulls at night has its effects on other sea birds, such as the shearwaters, who, dreading the predatory gulls, seize the chance to get on with their affairs under cover of darkness.

South of Ramsey are the islands of Skomer and Skokholm, both great resorts of sea birds, and particularly of the Manx shearwater, which breeds on them in huge numbers.

Tireless Wings

This shearwater is a member of the petrel tribe and flies on tireless wings over the waves, skimming along with wonderful ease, and rarely visiting land except during the breeding season, when it deposits a single egg down a rabbit hole or in some other convenient recess.

The nesting population of Manx shearwaters on Skokholm is an immense one, yet by day few traces of this great number of birds can be discerned. Here and there a few feathers, plus picked bones, tell of a shearwater that has met with disaster, and "whitewash" at the mouths of the burrows hints at dwellers



The booming of the bittern is a remarkable sound as heard at night on the Norfolk Broads.

underground, but no other signs of the birds are visible.

While the sun rides the heavens, while great black-backed, lesser black-backed and herring gulls fly to and fro, no Manx shearwaters are to be seen on or near the island, though out at sea an occasional dark shape skims across the waves. As the afternoon passes and the evening draws on, these birds get more numerous and gradually form into a flock which gets bigger and bigger. Soon there is a vast crowd of shearwaters flying around or floating on the water and waiting for sunset.

Shearwater Revels

To see this crowd at its best, and to really appreciate the homecoming, an overcast evening with no moon should be chosen. Very few shearwaters venture ashore on a bright moonlight night, and even on a dull one they wait until it is really dark before flying in. It may be midnight or later before the fun begins, before batlike shapes hustle through the

air and weird cries are heard on all sides, some seeming to be the voices of bantam cocks crowing vigorously, and others sounding as if a number of puppics are complaining in whimpering tones.

The calls and cries come from above and below, from the birds that dash so swiftly across the sky and from their mates in the burrows beneath our feet. These latter, which have been on duty for twenty-four hours or longer—sometimes the sitting bird does not get relieved for two or three days—are anxious to get away, and no sooner has the arriving shearwater come in than the departing one scuttles off.

Incoming birds flop down on the turf, into the bracken or into the heather, pick themselves up and shuffle off for home. Outgoing ones make for a good taking off place—they have difficulty in getting underway on the flat—such as the departure rock at the south-western corner of the island. I stood near this and waited and watched



ENJOYING A CATCH

The otter is a keen and skilful fisher, so skilful that it is regarded as a troublesome poacher in preserved waters. Above is an otter demolishing a trout which it has caught.



CREATURES OF THE NIGHT

Badgers are rarely seen abroad in daylight, but come forth from their burrows at night and go hunting for frogs, slugs, wasps' nests and young rabbits.

one night and saw an amazing stream of birds. The rosy beam from the light-house flashed across the ground at regular intervals, illuminating dark rat-like forms that scuttled briskly one behind the other to the ridge, scrambled up the sloping rock, spread their wings on reaching the top, and sped away out to the open sea.

Pageant of the Night

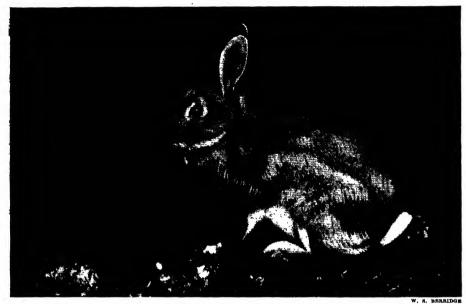
The traffic was brisk until three o'clock, by which time a faint hint of coming day was apparent in the east, which must have been seen by a gull that had roused itself from slumber, for one of these birds yelled loudly on the nearby gull field. This might have been a signal to the shearwaters, a belated bird came along and then the procession ended. Silence fell, no more voices were to be heard either in the air or underground, and it was apparent that the pageant of the night was over. By the time the light had come and the gulls were awake, it seemed difficult to believe that c.c.--i*

the shearwaters' revels had not been a fantastic dream.

But before we say good-bye to the Manx shearwaters and their islands, the storm petrels, which also nest here, must be mentioned, for they too are birds of the night so far as visits to the nursery are concerned.

The storm petrel sometimes known as Mother Carey's chicken, is that tiny member of the petrel family which is clad in black with a light rump, and looks like a swallow as it skims over the waves. It has no love of the land, and is a bird of the widest oceans, yet the need to rear young drives it ashore in the spring, though only like its larger relative at "the dead of night," when it seeks its nesting places in old walls and between piled up stones.

There is an old lime kiln on Skokholm, that has long fallen into disuse, and about it when night has come, fly small dark shapes that whisk by, drop down, slip away into holes, and give rise to queer sounds deep in the piled up



A RABBIT ON THE ALERT
Rabbits, most familiar of all wild animals, may be seen almost everywhere in the countryside. Although others may regard them as pretty and attractive creatures, the farmer
considers them a nuisance.



WOODCOCK RETURNING TO CHICKS

A night picture of a woodcock. This bird, which takes to the wing when darkness falls, utters
a peculiar croaking cry ending in a squeak.

rubbish. Other petrels come forth, take wing with more agility than the shearwaters, and dart away into the night. For a while there is much activity about the kiln, but it soon ceases and quietness descends upon the colony long before the sun creeps up out of the east.

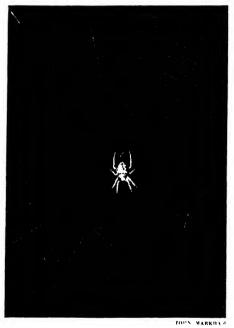
From night life on sea-girt islands let us return to the happenings of our woods and coppices, for in them dwell many lovers of darkness, though not one of them is a more sincere devotee of the night than the badger. So truly nocturnal is it in its habits that it is hardly ever seen abroad of its own accord by day. There is a large badgers' carth, or "sett," within a field and a half's length of my home, which has been in constant use for the past thirty years, during which time I have taken a keen interest in the animals and their affairs, yet only once have I seen badgers abroad before nightfall, and only once seen a badger late going home.

Shy Badgers

One very warm June evening I decided I would go and watch by the badgers' earth, and started in good time, knowing it was necessary to be in place before sunset, and remain there without moving until dark had really fallen, when with luck I might see these shyest creatures of our countryside come forth and go off for their night's hunting.

I walked gently, but without taking any special precautions, under the trees, and towards the great burrow where the badgers dwell, but as I approached something white caught my eye and I stopped abruptly, for in the same instant I had realized I was looking at a badger's face, the white being the central portion between the two parallel black stripes. There on the pile of beaten down earth before the nearest entrance sat two threeparts grown cubs, evidently enjoying the fresh air after lying all day in their stuffy hole. But as I saw them they With startled grunts they saw me. simultaneously tried to bolt underground —for a second there was a traffic jam in the tunnel, and then they were gone.

I went up to the earth, and studied its entrance holes and the many signs of nightly activity. The ground around was worn smooth by much coming and going. The undergrowth about was crushed by the romping youngsters, and there were clearly defined paths leading away into the woods. While the cubs raced, chased and rolled, the old badgers journeyed off in search of nightwandering frogs, slugs, grubs, young



THE SPIDER'S PARLOUR

A flashlight photograph of a female garden
spider in its newly finished web.

rabbits in their nests, the paper-built citadels of the wasps, and other things in which badgers delight.

If badgers are shy and enjoy the quietness and secrecy of the night, they are far from doleful animals. I once had the good fortune to see some young badgers amusing themselves and quite unsuspicious of a human presence. It was in that hour when the night begins to give place to oncoming day, and the cubs were having a last romp before retiring to rest. They were almost full grown and

were big heavy beasts, yet they played like puppies, running after one another, tumbling each other head over heels, and having the best of good times.

Badgers are very high-spirited jovial animals, and I have known their love of fun get them into dire disgrace. The culprits were the badgers from the earth I have mentioned, and when they went forth for "a lark" on a moonlit night, where must they go but into a neighbouring field of standing grain.

The corn as corn held no interest for them, but they enjoyed running in and out of it and playing hide and seek in it. In the morning there was a dreadful mess, a considerable amount of wheat having been rolled and trampled down. Fortunately, the owner of the field was a good naturalist, and forgave the too playful badgers for the mischief they had done in their light-hearted romp.

While the badgers hold high revel, such animals as hares and rabbits take the opportunity to attend to serious affairs, and make expeditions across the fields to feast on the juicy leaves of the

young clover crop, gnaw the farmer's "roots," and so on. They do not scamper off haphazardly, but travel by recognized roads, well-used paths that lead beneath gates, and through holes in the hedges.

Foxes in their nightly journeys also follow paths, though they usually avoid gates and our trodden ways; though, too, their high roads are never so well defined and obvious as those of the badgers.

But the most lively of all the animals of the night are those hunters of the waterways, the otters; whether they are journeying with serious intent or having a romp before starting, they do it with utmost abandon. Badgers at play are quite dull creatures compared with otters. The latter are, indeed, jovial beasts. I have seen an otter nearly eight years of age—my beloved pet, "Madame Moses"—turn catherine wheels in the water for the mere fun of doing so. The antics of young otters are both lovely and amazing. The moon that shines down on a river where otters live sees



BLACKCAP WARBLER

The young birds, with mouths gaping in expectancy, are apparently to be disappointed. The blackcap sings on after dark hus fallen and is often mistaken for the nightingale.

some lively doings, indeed. It sees the otters not only chasing and catching fish in the pools, but playing like lunatics both in the deep and shallow water. They dive and bring up pebbles from the river bed, throw them aloft, catch them on their noses, let them go, and recover them before they can sink to the bottom.

Cry of the Otter

Normally, the otter's "conversation" is limited to sounds of the "vut! vut!" description and a squeaky cry; but when mate calls to mate, or a mother to her cubs, a plaintive whistle carries far over the water.

But apropos of sounds of the night, no mention has yet been made of bird song, though the springtime evenings are often rendered glorious by tireless songsters that sing on and on into the quiet hours of the night.

The most famous member of this late choir is, of course, the nightingale, and may I suggest that it owes a little of its great reputation to the glamorous conditions under which it is heard. When that marvellous voice rises through the scented air of a summer night it does indeed seem lovely beyond all comparison, and lovely it truly is, though its beauty is less obvious when heard at other times and more or less drowned by competing blackbirds, thrushes and warblers.

With regard to warblers, several of these, and particularly the blackcap, sing on into the night, and the last named is often mistaken for the nightingale. The mistake is excusable, as it is no mean understudy for the more celebrated singer and is usually found in those bushy corners and in those quiet coppices favoured by its relative.

Then there is the garden warbler, a bird of the same family as the blackcap, clad in sober grey-brown and often found, as its name denotes, in gardens and shrubberies. It has a good voice, though not of the nightingale's super quality, and is an indefatigable singer. It sings on and on in the morning, at

any time of day, and into the night. Perhaps it rests its lungs for an hour or two during the true hours of night, but it breaks into song again while the shadows of darkness envelop garden and countryside.

In Norway, where the summer night is a mere matter of lengthening shadows, and the flush of sunset serves too for the glow of sunrise, many birds sing the night through, and I remember particularly, strolling between two and three o'clock in the morning, through a pinewood and listening to the redwings.

The redwing has a pretty thrushlike song, and heard thus in the magic night it was beautiful indeed. I stood in a clearing, a forest glade, with birds singing from the dark shadowy trees, the air scented with pine, while overhead stars twinkled from a violet sky, save where they were masked by a rose-tinted wisp of cloud.

Down from the starry sky came a queer sound, "croak-wee! croak-wee!" It sounded like a frog croaking but ended in a sort of squeak. It came again and again, and then I saw a large batlike shape flapping overhead. The shape vanished over the trees, but soon came back, and it was evident it was circling over the glade. It was a woodcock "roding."

Croak of the Woodcock

We may often see woodcock doing this here in the British Isles, particularly in the springtime when they have nesting areas to proclaim.

The birds wait for evening, and then as darkness falls they take wing, to fly around over their home territory, croaking as they fly. No doubt this demonstration takes the place of song and serves the same purpose, namely that of territorial advertisement.

No account of wild life at night must omit mention of those creatures of the dark, the frog and the toad. In the very early spring, before the woodcock thinks of croaking its love song, these two go on night-time trips, leaving their winter sleeping quarters in the pondside and under stones, etc., to make their way to the chosen pool in which

they will lay their eggs.

Here the frog, rejoicing in the glory of springtime, raises its nose from the water and sings, though the croaking of our species is never so loud or noticeable as that of the Continental edible trog, which is quite a songster.

Even when spawning time is over, and the frog and the toad have returned to dry land, they remain lovers of the night, preferring to make their expeditions under cover of darkness.

I have often, when waiting and watching for badgers to come forth at night, heard such mysterious rustlings, such noises as of elves at play, that I have been compelled to flash the ray of an electric torch in the direction of the sound and see what could be causing it. Once the beam revealed the elegant slender shape of a long-tailed mouse, but more often its white light has come to a focus on the squat portly form of a slow-moving toad.

The toad, like the badger, likes to

get home again in good time, and after a due stroll it returns the way it has come, creeps back into the retreat which serves it as a den, and is out of sight when the sun rises, but it lies in its hole well satisfied with itself, for it has fared excellently on the insects of the night.

Space is running short, and I cannot do more than make passing reference to the insects that come forth after sunset, from the moths large and small, and many exceedingly beautiful, to the glowworm that lights its beacon in the grass, and the dor-beetles that fly with heavy flight through the darkness.

The summer night is full of insect life, and even a mild evening in midwinter will find moths on the wing. I have seen as many as a dozen specimens of the small winter moth dancing at once in the brilliant beam of the headlights of a motor car, and this in mid-December. The fact is that nature at night is ever full of interest, and that whether the season be midsummer or mid-winter, spring or autumn, there is always something to see.

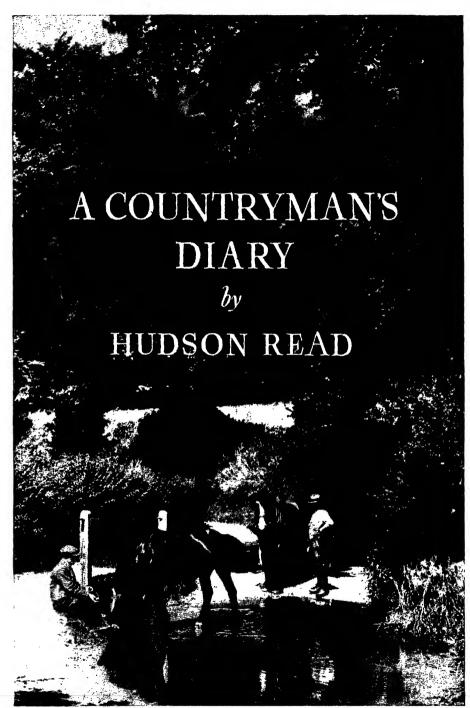


MANX SHEARWATERS

FRANCES PITT

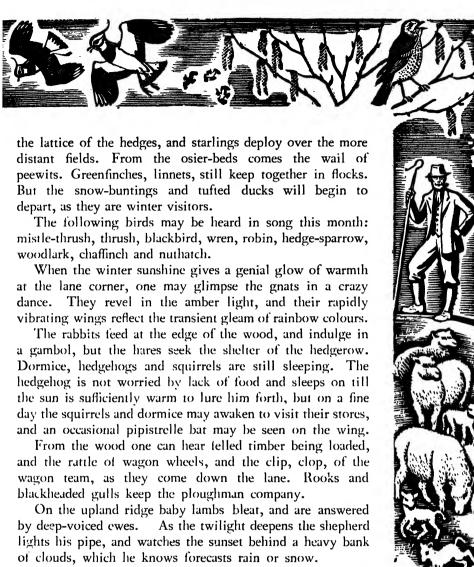
These birds rarely come ashore, except during the breeding season, when a single egg is hatched in a rabbit hole or other suitable opening. Even then they do not land until nightfall, and the sitting bird will stay on the nest for twenty-four hours without telief.

At dawn they fly out to sea again.



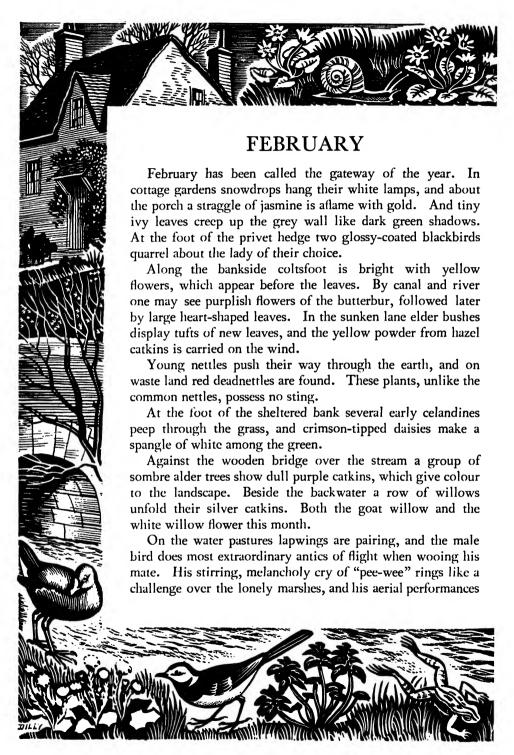
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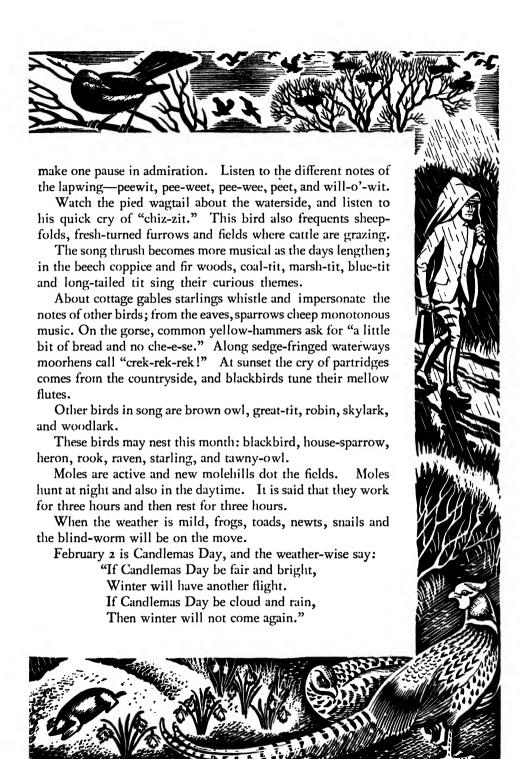


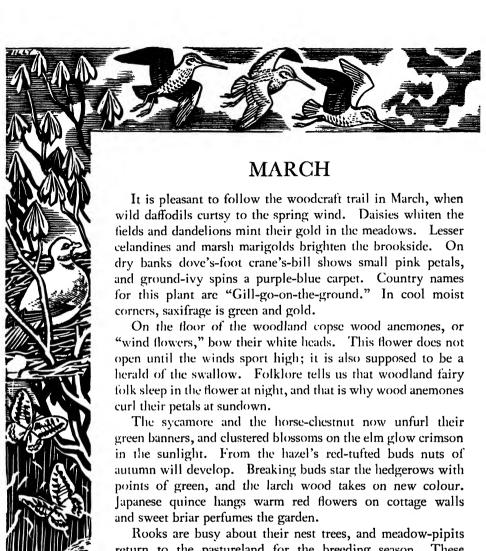


Later a pale moon hangs above the hill, and the rugged form of the shepherd is silhouetted on the skyline.

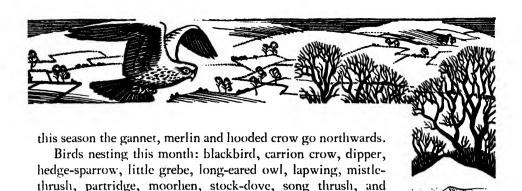








The whimper of the redshank is heard over the marshland, and, should one go near the nest, wild cries greet the intruder. This bird might be called the sentinel of the marshes. About



wood pigeon.

The month-end sees the return of that handsome bird the wheatear to downlands and sheep-walks. About the same time comes the chiff-chaff, that little bird which delights to call its own name from the woodlands. Redwings, fieldfares, snipe, teal and woodcock begin to depart.

Although hares are usually nocturnal animals and keep to their "form" most of the day, they go a little mad about their love affairs this month. In the courting season many a jack will fight almost to death over the affection of some doe. When danger threatens the hare is as cunning as the fox, and shows remarkable ingenuity to escape death when pressed by man, dog, or fox. Wild rabbits are busy with young, and does often seek ploughed fields for safety and peace.

Bat, dormouse and hedgehog awaken from their winter sleep. Earthworms are active, and Darwin estimated fifty-three thousand worms to an acre. Toads and frogs spawn. Spiders reappear and a few butterflies come out on sunny days.

Weather wisdom:

"A wet March makes a sad harvest."

"March dry, good rye."

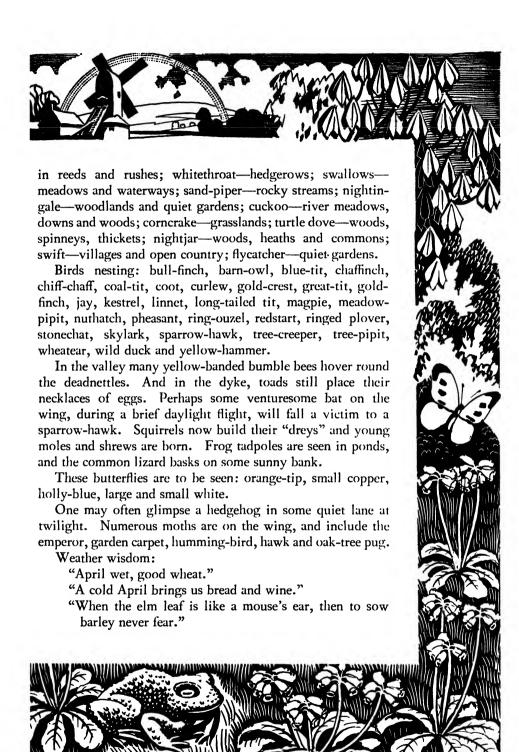
"A peck of dust is worth a king's ransom."

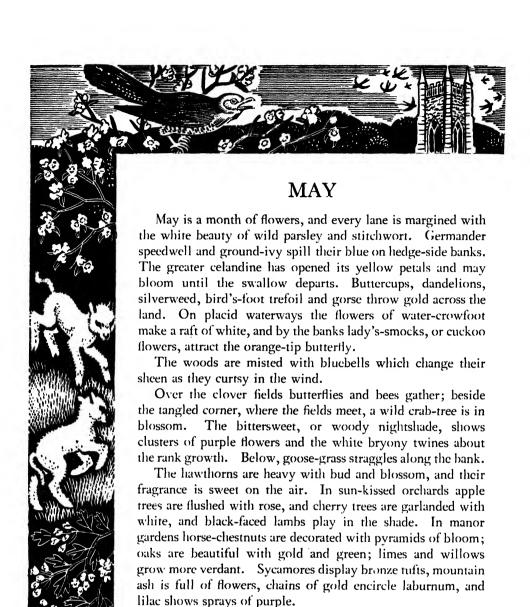
Norse folklore terms March:

"The lengthening month that wakes the adder and blooms the whin."

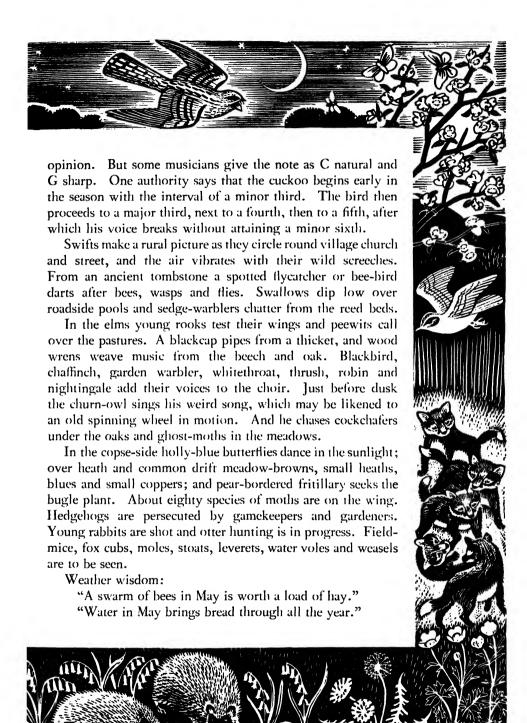








From the plantation a cuckoo calls. This bird usually sings in D or D sharp, and White of Selborne held this





honeysuckle is sweet on the wind.

Along the stream-side, hemp agrimonics show a peep of purple, loosestrifes build floral pyramids above the sedges, and forget-me-nots are blue below the banks.



White willows and alders give shade by the brook, elms throw shadows across the lanes, oaks, sycamores, walnuts and poplars give character to the countryside. Hollies are gay with fresh leaves and many conifers display new green.

Bird song now decreases in volume and the mistle-thrush has ceased to sing, the robin loses his voice and the cuckoo begins to stammer. The thrush often dwells on a few notes, monotonous in construction. The yellow-hammer breaks the silence of a drowsy afternoon, and the corn-bunting seems too lazy to finish his song. A whin-chat utters a low note as he flits about the hayfields. By slow canals, sedge and reed warblers make merry chatter; from the herbage whitethroats and blackcaps give their summer songs.

Numerous young birds are on the wing, although some birds are still busy with domestic cares. After the nesting season many birds moult, and the renewal of plumage is often a strain, and during this time birds are quiet.

May-flies now dance over their stretch of water and fish rise to take them as they touch the surface. Countless tadpoles of newts, frogs and toads blacken the shallows; water-skaters slide about; water beetles seek their prey, and dragon-flies in gay colours are like fairy aeroplanes in the summer sunshine.

Baby field-mice, voles, rats and rabbits may be observed in quiet by-ways and woods.

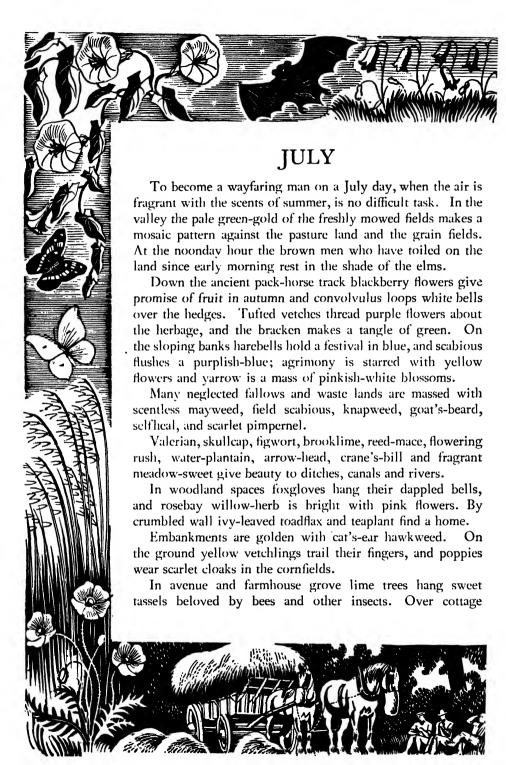
Butterflies are abundant and include white admiral, small tortoiseshell and black hair-streak.

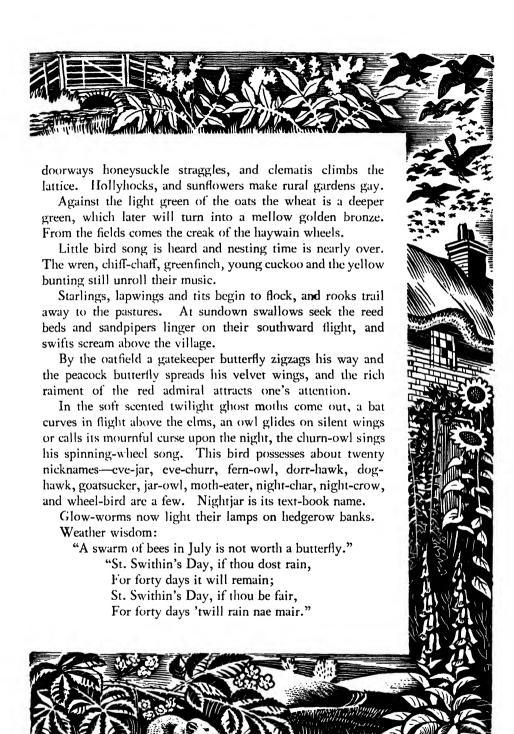
Weather wisdom:

"A swarm of bees in June is not worth a silver spoon."

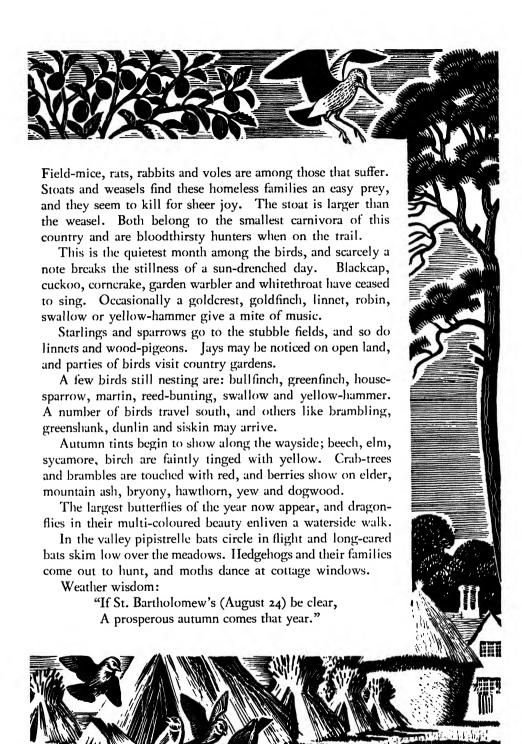
"A leak in June brings harvest soon."

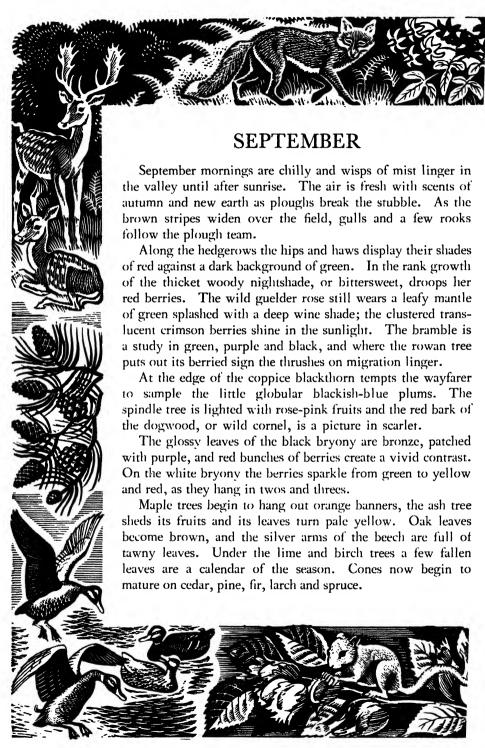


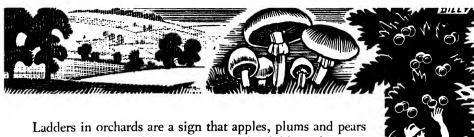












Ladders in orchards are a sign that apples, plums and pears are ready to gather. Men are busy in the fields with grain, clover and grass.

In woods one may discover fungi of various colours, some of which are poisonous, and "fairy rings" appear in fields and meadows. By hedgesides the wild teasel has a band of purple about its bristly head. Marjoram brightens hillsides, and heather carpets miles of moorland.

Many birds are now on migration among which may be numbered butcher-bird, blackcap, common sandpiper, chiffchaff, lesser whitethroat, nightjar, martin, swallow and yellow wagtail. Some of the following birds will arrive this month: green sandpiper, jack-snipe, fieldfare, redwing and woodcock.

About the fields linnets call, over pastures lapwings cry, greenfinches utter a sociable twitter, the hedge-sparrow pipes plaintive music from the lane, tits make sibilant whispers as they roam the woodlands.

About sixteen species of butterflies, and roughly thirty kinds of moths, might be observed during the month.

Some small animals begin to gather their winter stores: dormice, field-mice, hedgehogs and squirrels. Foxes prowl the countryside and rats forsake their summer haunts. As the month grows old, bees, flies and wasps visit ivy flowers for nectar, and the dor-beetle's drowsy hum is heard. Snails take cover, toads and frogs show signs of hibernation.

Weather wisdom:

"Should you notice a goat graze with his head to the wind, expect a fine day; but when he crops with tail to the wind, look out for rain during the day."





Along the moor canal the dense reed-beds are touched to yellow with the alchemy of the season. In the sunlight the water is patterned with amber reflections. Against this background a kingfisher displays his sapphire mantle—is fisherman in gay raiment. The grey skirts of the willows are flecked with orange and the pond beneath their shade is still emerald with duckweed.

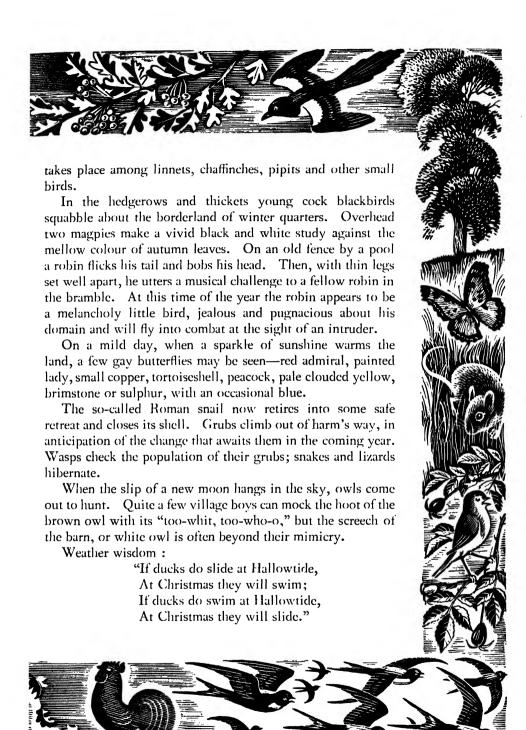
Soon the leaves begin to fall from ash, beech, elm, horsecliestnut, mulberry, oak, sycamore and walnut. And lanes lawns and woods wear a picturesque carpet of autumn colours

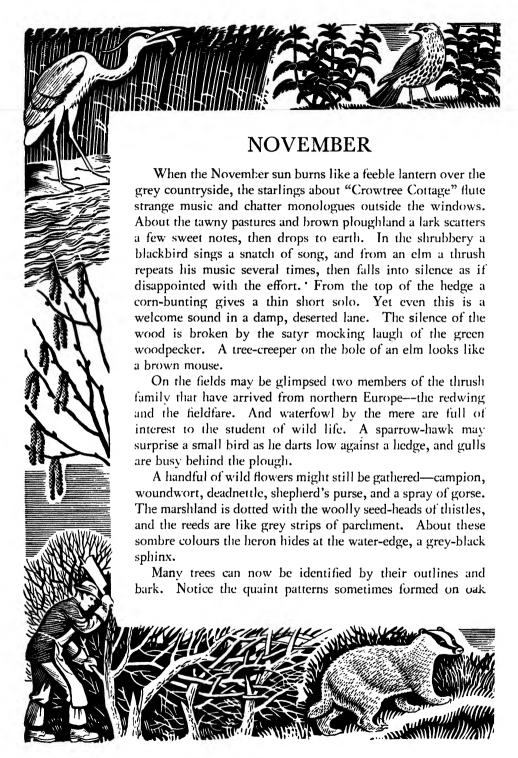
Squirrels delight to sample beechmast, acorns and hazel-nuts and wood-mice enjoy a feast of rose-hips or nuts. Birds linge about the red hawthorn berries and thrushes banquet on yew berries. Rooks and jackdaws hold revel where acorns abound chaffinches, greenfinches and tit-mice haunt the beech grove

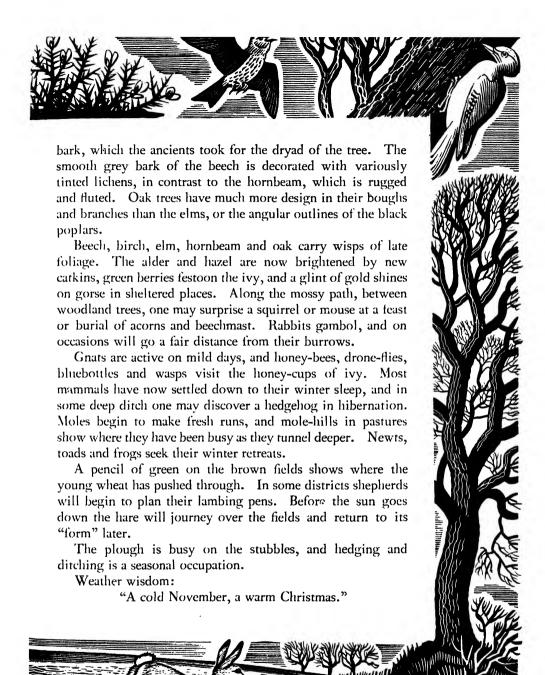
This month most of the swallows and house-martins wil depart, so will the landrail and sandpiper. A few wild geese duck, redwings and fieldfares will arrive.

Many birds now gather into flocks—rooks, finches, plovers wood-pigeons, wild geese and swans. Much internal migration









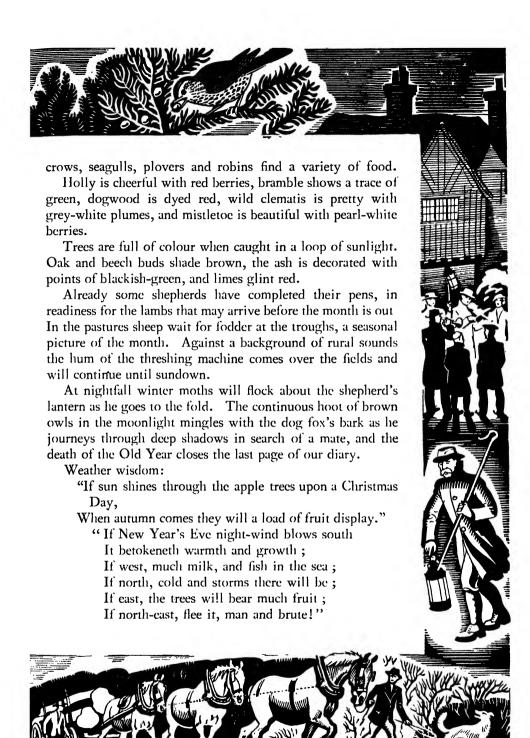
DECEMBER

Although the year grows old and the December days shorter, one still finds little adventures along the woodcraft trail. Even before dawn the farmyard cocks sound reveille and the rooks leave their dormitory to seek breakfast in the meadowland. When the blackbird gets out of bed, he chatters like an old gentleman in a nasty temper.

In the fields by the wood are a motley company of birds, which include buntings, bramblings, chaffinches, greenfinches and a detachment of sparrows. On the stubble titmice give an acrobatic display on some dried stalks, and larks find something that suits their fancy on a piece of old ploughed land. Linnets wander from field to field in a restless nomadic manner. By the brook a pied wagtail says "chizzit, chizzit" when disturbed. From the wood an owl hoots before he goes to sleep and a jay is like a fleeting coloured shadow. Along Blackberry Lane the denseness of the bushes make a safe and warm harbourage for the birds, and the pine trees shelter a number of goldcrests. The rickyard also becomes a guest house in severe weather, and the grey church tower is a sanctuary for jackdaw and barn-owl.

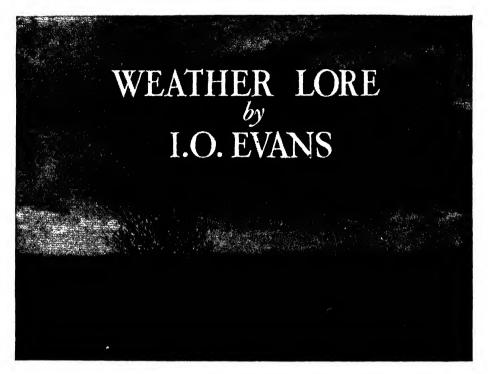
Most of the thrush family are fond of berries, and the fruit of the yew attracts the mistle-thrush while fieldfares visit the holly. According to old country lore, a heavy crop of berries foretells hard weather ahead.

The ploughman moves up and down the tawny acres with a plodding gait, which he occasionally breaks at the corner for a brief rest. On the broken soil, jackdaws, rooks, hooded





A photograph of a turbulent sky taken in the aftermath of a storm on a thundery afternoo



the indoor townsman, but it is of first importance to the countryman, as it is to the airman and the sailor and to all who work in the open air. It is one of the chief factors that decide the result of our sporting events; on it the success or failure of our holidays may depend. It gives us a plentiful harvest or a shortage, it hurls our ships upon the rocks or speeds them into their haven. Few things there are that have so great an influence upon our lives.

For such reasons the weather has, right from the dawn of history, awakened the curiosity and inspired the efforts of men. In the early civilizations we find attempts to foretell it sometimes, as we do, by common-sense signs, sometimes by ideas which we should regard as magical and wild. There have even been attempts to control it by magical means! Nowadays we make little effort to decide the weather; but if ever we discovered methods of affecting it—by gunfire, by

wireless or by the systematic growth of forests on the desert places of the world, we should not be slow at trying to put them into use.

While not at present seeking to control weather, the modern world makes great efforts to understand it and to read its more important changes in advance. Every nation has its meteorological office, where the records made by observers all over the world are compared and studied and entered upon maps. From these records attempts are made to forecast the coming changes, and the results are printed in the daily papers, posted up in public places, sent by telegram to enquirers, broadcast from the wireless transmitters, and picked up by receiving sets in practically every home.

The forecasts, as we know, are not always as reliable as we could wish! Meteorology is not an exact science, as the phrase goes. None the less, they are correct enough to be of value to us all, and we do well to take them into account



MARES' TAILS

G. A. CLARKE

These tufted plumes of silvery thread-like clouds, popularly known as mares' tails, and termed cirrus clouds by the experts, are usually seen in front of a depression.

when we fare forth into the countryside. Not that there is any need to take a wireless outfit along with us—half the joy of wayfaring is to get out of the sound of such things—but it is worth while listening to, or reading, any of the official forecasts that happen to come our way.

The meteorological office, in addition to making its forecasts, has gained much useful information regarding the way the weather "works." A general idea of its methods is interesting to all outdoor lovers and useful too; and it can be combined with many of the old proverbs and sayings regarding the signs and portents of the weather that have been handed down to us from time immemorial.

Perhaps the most important part of the weather is the wind, the wind that freshens the air around us, that carries on its wings rain or thunderstorm, snow or hail. The wind, in its turn, depends upon the pressure of the atmosphere, that vast ocean of air two hundred or more miles in height, at the bottom of which we live.

This ocean of air weighs down upon the earth with a thrust, roughly, of sixteen pounds to every square inch. Its weight, or pressure as we more often call it, is enough to counterbalance the weight of a column of water about thirty feet high, or of thirty-two inches of mercury. Such a column, stored in a glass tube sealed at its top, forms the chief part of the barometer, the instrument that registers the pressure of the air.

High and Low Pressure

This pressure can vary greatly, and as it varies so it brings about changes in the weather and the winds. The air moves not, as we should expect, directly from a region of high pressure to one of low, but in a circular or spiral course, not unlike the swirl of water running out of a bath. Because of the rotation of the earth the winds flow round a centre of low pressure in the opposite direction to the hands of the clock. "If you stand with

your back to the wind, the pressure is lower on your left hand than on your right."

A centre of low pressure with the winds swirling "widdershins" (against the sun) is called a cyclone, a depression, or a "low." The greater the difference in air-pressure at its centre and around it, the greater is the depression (of the mercury in the barometer), and the stronger are its winds. In addition to the swirling of the air around it, the whole depression has a motion of its own. It travels across our islands, more or less slowly, from west to cast. And as it travels it brings with it a whole series of changes of weather. It is for this reason that the official weather reports, before they get down to the actual forecast, begin with an account of the movement of such depressions, often puzzling greatly those of us who do not know what they are about.

As the cyclone slowly advances towards

us, the air pressure and the barometer fall. The blue sky is flecked with the delicate curly clouds we call "mares' tails," which slowly increase until the whole sky is obscured. Through the veiling clouds the sun looks watery and the moon looks pale or there may be a halo, a faint circle of light, around the moon. The winds veer or back, change direction with or against the clock, according as the centre of the depression is to our north or south. The clouds thicken and appear lower, the air gets muggy and oppressive and damp. Then down comes the rain. In its own time the centre of the cyclone passes, the barometer rises, and the weather begins to improve. The steady rain gives place to showers, the blue sky appears through the breaks in the clouds, the air becomes refreshing and cool.

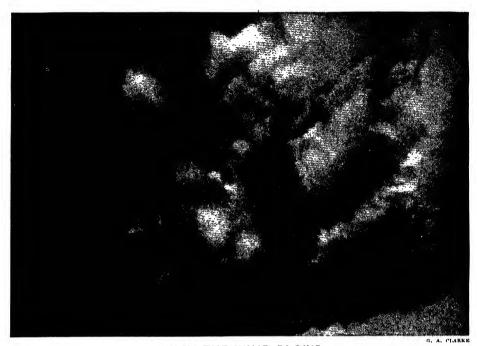
The opposite to a cyclone is an anticyclone or "high," round which the winds travel clockwise or fall to a calm. The centre of high pressure travels much



G. A. CLARK

CIRRUS CLOUDS

Another photograph of cirrus clouds in parallel bunds. Such formations often appear in changeable windy weather on the margins of depressions.



WHEN THE WIND BLOWS

A photograph showing the turbulent under surface of a cloud layer due to disturbance caused by the passing of a squall.

more slowly than the "low" and may remain almost motionless for days. Usually so long as it lasts it gives us fine weather; it may bring us cloud, so that there is little sunshine, or local showers and mist, but on the other hand it may bring us glorious sunny days. Its approach is foreshadowed by a rising barometer.

Now we are in a better position to understand the use of the barometer in foretelling a weather change. It is not the position of the hands that matters so much as their movements, which we can often read by comparing them with a second pointer adjustable by hand. A gentle tap on the face of the glass will often give the hands a tiny jerk—it is a minor holiday pleasure to tap the barometer in the hall of dwelling-house or hotel, looking gravely at it the while and nodding or shaking one's head at it sadly when the hand moves responsively up or down. (Like a wireless set, a

barometer is a thing that few of us care to carry with us, but we can often consult one in the houses where we may call for a meal or stay.)

The wording on the dial, from "Stormy" to "Set Fair," is not very reliable, except for the word "Change," which is often significant enough. But a movement of the hand upward (from a lower figure to a higher on a circular dial) indicates the approach of an anticyclone or the passing over of a "low" and thus foretells the coming of finer weather. Similarly a fall of the hand forebodes an approaching cyclone and is an ominous sign. What is known as Admiral Fitzroy's rule is easy to remember:

"Barometer falls for warm, wet, or more wind; rises for cold, dry, or less wind."

It is well also to bear in mind two other rules for barometer reading, both, like many other weather sayings, in convenient rhymes:—

"Long foretold, long last—short

notice, soon past."

"First rise after low—foretells stronger blow." The wind often becomes squally when the centre of the depression has

just gone by.

Whatever "high" or "low" it may be associated with, the strength of the wind is important in itself. The observers measure the wind direction by a vane (we all know the weathercock on the church), and its force either by revolving cups that the blast whirls round or by a pressure tube turned by a vane to face it. The scale used to describe wind-strength was devised by Admiral Beaufort at the beginning of the last century before proper measuring instruments had come into use. He had in mind the amount of canvas a ship could carry in different forces of wind but his scale will also show their effects on objects ashore. It rises from strength o, a "calm," when

the ship lies motionless and smoke rises vertically, through the "Iresh breeze" (strength 5) of about twenty miles an hour when the sailing ship can sweep ahead under all canvas, small trees sway and wavelets form on ponds and lakes, to the "gale" and the "hurricane" (strength 12) when ships are wrecked, trees uprooted, and buildings thrown down.

Force of a Gale

A strong enough wind can be dangerous to the cyclist or to anyone inexperienced on mountain tops or cliffs, for it is very easy to under-estimate its force. The gales of winter, too, may play havoc with dwellings near the sea, hurling great waves, laden with shingle and stone upon them, smashing embankments and breakwaters and sending the sea to flood the low-lying parts of the land. The floods in East Anglia this



AFTER THE RAIN

A large rain cloud breaking up and revealing the sky after rain. The dark layers of shapeless clouds with rain falling from their ragged edges are known as nimbus or rain clouds. When they break up into loose clouds at low levels they are known as fractonimbus, of which the above photograph is an illustration.

year will still be remembered by us all. Fortunately, it is rarely that Britain is swept by destructive gales, yet they are not unknown in our islands. Let Macaulay describe the tempest which smote our country in the reign of Queen Anne:

"The great tempest of November, 1703, the only tempest which in our latitude has equalled the rage of a tropical hurricane . . . left a dreadful recollection in the minds of all men. No other tempest was ever in this country the occasion of a parliamentary address or of a public fast. Whole fleets were cast away. Large mansions were blown down. One Prelate was buried beneath the ruins of his palace. London and Bristol had presented the appearance of cities just sacked. Hundreds of families were still in mourning. The prostrate trunks of large trees, and the ruins of houses, attested, in all the southern counties, the fury of the blast."

Driven by the wind, the clouds sweep across the sky, covering its blue tint

with their snowy whiteness, gleaming pink or crimson in the rays of the setting sun, or veiling the earth in a pall of black. There are several distinct types of cloud, as we can easily see for ourselves; they were first distinguished in 1803 by Luke Howard, who gave them names which are still in use, names, like so many scientific terms, based on Latin words

The great fleecy clouds, billowing like the smoke from a railway engine or like masses of cotton-wool, are cumulus clouds, heaped clouds. Their sides and upper surface rise into great billows, sometimes broken off into detached masses and carried away by the wind, but their lower edge, unlike the clouds some unobservant artists depict in their paintings, is almost straight and horizontal. All over the sky, moreover, the flat bases of the cumulus clouds are more or less upon the same level.

These clouds, like the puffs of steam which they so much resemble, are formed by the vapour of water carried upwards



MORNING CLOUDS

Small cloudlets forming on a summer morning. These fleecy cotton-wool like clouds are termed cumulus clouds, and are usually seen on summer days.



JULY IN THE NORTHERN HIGHLANDS

A photograph of a fine array of cumulus clouds taken on a summer day near Poolewe, in Ross-shire. It will be seen that the piled billowing clouds are sailing high above the hilltops and trailing their shadows across the land. In the background, and veiled by the moisture in the atmosphere, are the lofty hills round Loch Maree and Glen Torridon.

by a rising current of air. At first the vapour is invisible, as indeed steam is until it is cooled by the air, but it is carried upwards, chilling as it goes, the air far aloft being much cooler than it is on ground level, as any hill-climber well knows. At last it reaches a level so cool that it begins to condense, and then a visible cloud begins to form, composed of droplets of water light enough to be buoyed up by the ascending air.

Curl Clouds

Half hidden sometimes by the lower cumulus clouds, and plainly far aloft against the sky, are smaller more delicate clouds like feathers or wisps of fine hair. These are the cirrus, the curl clouds. They consist not of droplets of rain but of tiny particles of ice, and they are formed high up, sometimes five or six miles up, in the air. The cirrus clouds are ambiguous as forecasters of weather. When they appear only to fade out

gradually, it is a good sign. When they thicken to form a thin sheet covering large areas of the sky, it is a very bad sign indeed. Do these interweaving threads merely mark differences in the amount of ice present, or do they indicate the path of complicated currents in the air?

Other clouds stretch across the sky in parallel level layers. They are the stratus or "spread" clouds, not so attractive in appearance as the cumulus or cirrus. When we see them from below they resemble a drab low-level sky. When they are close enough to touch the ground, or to be pierced by a mountain top, we recognize them as being mist or fog.

The remaining form of cloud most of us know only too well. It is the nimbus, the rain cloud, of no special shape, which pours down upon our heads the water which it contains.

Few things in nature are entirely distinct, and these types of clouds often



THE VEILED SUN

Covering the face of the sky is a layer of cloud known as alto-stratus. A stratus cloud is simply a horizontal layer of cloud. When the cloud is high in the sky, perhaps at 15,000 feet, it is known as alto-stratus. In the upper part of the above photograph some ragged nimbus is seen, and below a patch of strato-cumulus.

blend to produce others of hybrid form. The cumulus, the summer-time, fair weather clouds, for example, may be snowy white. Or they may combine with the rain clouds to form the cumulonimbus, dark and menacing instead of white and cheerful, spreading out above anvil-fashion or fringed with cirrus-like wisps, threatening us with rain or thunder and then releasing upon us the downpour and the storm.

The cirrus clouds from their hairy wispy appearance are the marcs' tails which may or may not form the signs of a cyclone drawing near. thicken to form the cirro-cumulus, giving the heavens that rippled streaky appearance which we call a mackerel sky, or blend to form the sheet of cirrostratus which pales the glory of sun or moon and may obscure the whole sky. Traditional signs of bad weather are:- "Mackerel sky and mares' tails, Make lofty ships to carry low sails."

" Mackerel sky: Not long wet, nor yet long dry."

The water whose vapour forms the clouds rises from the surface of land a sea, driven by that force which causes all movement on earth, the power o that great central generating station, the sun. A pan of water exposed to the fresh air will dry very quickly, for it contents evaporate and pass into th air as invisible vapour. By making us of this process the housewife dries he washing upon the line. From surfac of sea and river and lake this vapou is extracted, and from the surface c every living thing, and every animal anplant.

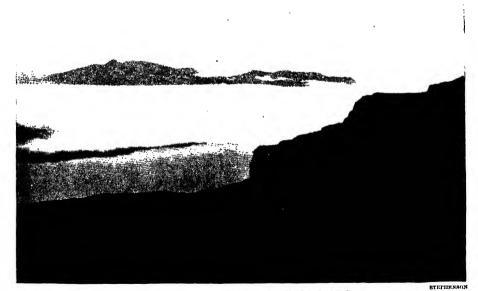
The amount of water-vapour in th air varies greatly from time to time Ingenious gadgets have been devised for measuring it, some of them depending on the difference in temperature indicated by thermometers whose bulbs are wetted and kept dry, some of them on alterations in the length of human hair. Little weather-houses can be bought, with twin doors on the threshold of which two figures stand. When the air is dry the woman figure comes out and the man goes in; when it is damp the woman goes in and the man comes out. To make its significance unmistakable the man is shown holding an open umbrella over his head.

Good Drying Weather

Not only does the quantity of watervapour vary but so does the capacity of the air for holding it. When there is little vapour present but the capacity is great, the air readily takes up moisture and wetness soon evaporates; it is good drying weather. When the air is saturated with vapour it will absorb no more. Then, when its temperature cools, perhaps with the coming of night, it will no longer be able to hold so much vapour as before. So the surplus vapour will have to be condensed into liquid form.

Some of the surplus vapour condenses around the fine specks of dust which the air contains, forming droplets too light to fall but large enough to obscure the air. Thus is produced a mist or fog, which is nothing but a low-lying stratus cloud. Often this process will take place in the cool moisture-laden air above a stream, so that a fog follows all the windings of the valley very curiously, looking from above like a great smoky serpent. Or it may take place on a mountain top, which remains obscured by mist even though its lower slopes are clear, a mist which is not carried along by the wind but which forms on one side as fast as it is dispersed by the breezes on the other.

Fog or mist produces many strange



MOUNTAINS ABOVE THE CLOUDS

In this view from the Coolin Hills of Skye we look down on the upper surface of a cloud bank or layer of fog which is only a few feet above sea-level. Across the narrow strip of sea in the foreground is seen the edge of the Isle of Soay. In the distance, and about fifteen miles away, the mountains of Rum rise above the clouds.



WHEN THE CLOUDS ARE LOW

This photograph was taken from the summit of Blencathra in the Lake District on a winter day. At that height the sun shone brilliantly from a clear sky, but in the valley below the day was dull and sunless.

effects, obscuring vision and hindering traffic throughout a town. Lights may be surrounded by circles of dim colour, or throw on the clouds before them shadows enlarged and monstrously distorted. One mountain in Germany obtained an evil reputation of witchcraft because of the shadows visible from its peak—the "Spectre of the Brocken," seen by affrighted or interested climbers, was nothing but their own shadows thrown by the rising sun upon its mists. The same effect may occasionally be obtained from the top of Snowdon. When the sun shines behind you you may catch a glimpse of the shadows of your head and shoulders, surrounded by a faint halo, thrown on the mists in the valley below.

A glass of cold water taken into a warm room becomes misted or moist on its outside owing to a little of the vapour in the air condensing on the cold surface. A similar moisture on trees and blades of grass condenses during the night, and can be seen or felt in the early morning

—that is the dew. In cold weather the moisture freezes as it forms into tiny particles of ice, the same ice which forms the patterns on the windows on a winter's day: it is no longer dew but hoar-frost.

The amount of water in the air, compared with the amount that the air will hold, naturally has an important effect on weather. A heavy dew is a welcome indication of a fine day. Mist may indicate fine weather or rain according to the direction it appears. "When you see the clouds on so-and-so hill" you may hear the country-folk say or "when so-and-so mountain puts on its hat, look out for a bad day." A mist travelling uphill from the shore is a hopeful sign, a mist travelling seawards from the hilltops a bad one:—

"When the mist is from the hill
Then good weather it doth spill
(spoil)

When the mist is from the sea Then good weather it will be," But in its thicker forms mist or fog is not so much the sign of bad weather as bad weather itself. It is the wet clammy blanket that obscures the vision, soaks the clothing, and leaves the body chill. In rough country even a light mist can be the source of deadly peril. The wise wayfarer knows this, and pays heed to the words of the local people and to the indications they give him, not venturing on the sea coast, the mountain, or the moors if they warn him of the mists.

When Rain is Coming

Excessive moisture in the air produces one striking effect, pleasing enough while it lasts, but the sign of evil to come. When the air is unusually clear, when distant objects stand out clear and plain and brightly coloured, and sometimes with a sort of glow about them as if they were being flood-lit, it is a sign of rain in plenty ahead. This is one of the most reliable indications that there

is, and it is quite unmistakable when you have learned to recognize it. Through the moisture-laden air, moreover, not merely do distant objects appear clearly but distant sounds come plainly. Often a distant locomotive whistle, which not merely rings louder but recognizably changes its tone before the onset of rain, is as good a barometer as one could wish.

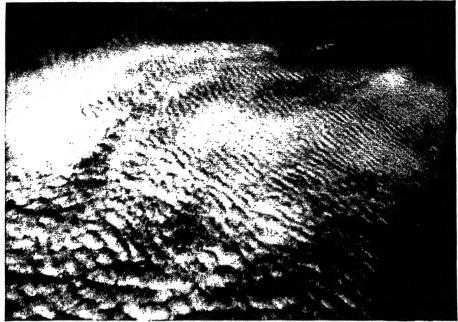
Excessive moisture in the air may also produce rings round the sun or moon, called a corona when it is near, and a halo when it is farther away. Other curves of light near the sun, and mock suns may also be seen. All these form warnings of bad weather. As the mate of the ill-fated Hesperus protested, as he gazed uneasily at the cloud-obscured sky:—

"Last night the moon had a golden ring, Tonight no moon we see."

Most attractive of all these signs in the sky, and one that is no warning of bad weather but a traditional sign of



A MACKEREL SKY
A picturesque arrangement of a finely waved sky seen against the light.



RIPPLES ON HIGH

G. A. CLARES

Above is seen another example of the familiar mackerel sky which consists of closely packed, curved clouds which are known as alto-cumulus, and which usually occur at a height of about fifteen thousand feet.

hope, is the rainbow, an arch of many coloured light spanning the sky. Our Norse ancestors thought of it poetically as a bridge connecting heaven and earth. Normally the outer part of the ring is red, the colours shading through orange, yellow, green and blue to violet. Sometimes there may be a second rainbow outside the first, and in this the colours are fainter and their order is reversed.

The rainbow, so Sir Isaac Newton discovered, is formed by the splitting up of the white sunlight through the refraction of the falling rain. Similar colours can be seen in a prism of glass.

Yet the rainbow, hopeful as it is, can be a warning of bad weather. Or so, at any rate, another rhyme informs us:—

"Rainbow in the morning—shepherd's warning;

Rainbow at night—shepherd's delight."

A similar rhyme uses the words "red sky" instead of "rainbow," and this

brings us to consider the colours of the sky. They range, according to place, season, weather, and the purity of the air, from the glorious blue to the pure white of the fine weather cumulus and to the darkness of the storm clouds. Bent in different degrees as they pass through the air, the hues which form the sunlight separate out, and the red and orange tints remain when the rest are lost, tinting the white of the clouds with their delicate glow, and painting patterns of glorious colour across the sky. Or they may combine with the dark shadows of approaching storm to give the sky a menacing furnace-like glow. As long ago as New Testament times the meaning of these signs was known, for is it not written—to quote Dr. Moffatt's translation:-

"When evening comes you say, 'It will be fine for the sky is red'; in the morning you say, 'It will be stormy today, for the sky is red and cloudy.'

You know how to distinguish the look of the sky."

But these considerations have for a moment led us from that of the most important form into which the vapour in the atmosphere condenses. We all of us know what is meant by rain! When the air is very cold the vapour may condense not as water but as ice, forming flakes of snow, and a pocket magnifying glass will show the beautiful six-sided crystals it builds. Or the vapour may form drops of rain which freeze as they fall through the air, arriving on the ground as hail. Sometimes, through some extraordinary conditions, the air-borne water descends not in drops in a gentle shower but in one deluging cloudburst.

We all know that a wireless set has to be "carthed," that the carth is, so to speak, a natural reservoir into which electricity will "flow." Electricity is produced by friction, by heat, by chemical action. It is only to be expected that it would be generated far aloft in the heavens, where currents of air mingle and interfere. High above the ground the force accumulates, in a great black cloud which overshadows and seems to threaten the earth. We feel uneasy, restless and irritable; the animals, too, are restless and move uneasily about. It is plain to tell that there is thunder in the air.

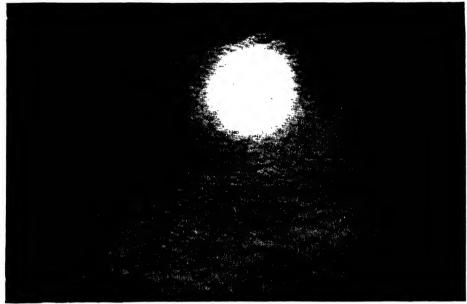
Storm Effects

Then the tension becomes too great, and the cloud discharges its electricity to earth as a lightning flash, accompanied by a roll or crash of thunder; and often at the same moment the rain pours down. The storm may be far away, so that we see its flashes only as gleams of sheet lightning momentarily illuminating the sky. If it is nearer, we are dazzled by the



A DOUBLE RAINBOW

However unobservant and lacking in weather wisdom we may be, we are familiar with this beautiful feature of the sky. Rainbows are formed by raindrops splitting up the sunlight into its constituent colours.



A RING ROUND THE MOON

G. A. CLARKE

These coloured rings which sometimes appear round the sun and the moon, but which are easier to notice round the moon are caused by the water vapour in the atmosphere.

blinding glare; there is a pause, during which it we are cool enough, we can count seconds to see how far the storm is away (about a mile to every five seconds' interval between flash and roll) and then the thunder deafens us with its roar. Now the nervous turn the mirrors to the wall and cover their heads; the more judicious and cool seek as safe a place as they can, and then watch the operation of nature's electrical machine.

Once the nature of lightning was known, it was not difficult, though at first it was thought somewhat profane, to devise safeguards against it. The lightning conductor is a metal ribbon or rod which projects higher than the topmost point of a building. It leads without a break down the walls, and is suitably earthed. So protected, a building is as safe as it can reasonably be, and even without a conductor a building is safer than the open air. Outdoors, a cave is the safest place. To sit or lie in a ditch is safe, if

uncomfortable. The dangerous places are trees, tempting as they are because of the shelter they give from the rain. They act like inefficient conductors and then part with the electric charge to any better conductor, such as the human body, that may be near; the tops of ridges are also dangerous in thunderstorms; so too are wire fences, along which the current may travel for some distance before it earths itself through the body of whoever may be standing near.

An Impressive Spectacle

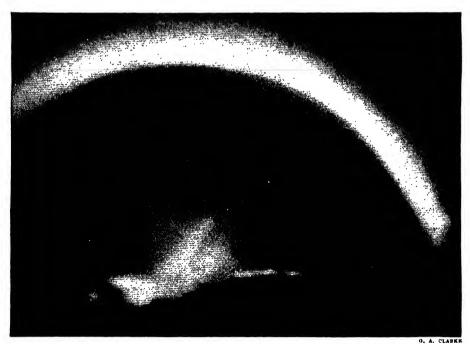
With suitable precautions, there is little enough danger in a storm. Many people fear the thunder not through dread of its danger but through its effects on their bodily chemistry, which makes them lose self-control. For those who are not subject to this terror, a thunderstorm is an impressive and interesting spectacle. The flash does not take the zigzag form commonly portrayed but a wavering course branching

out like the limbs of a tree. Very infrequently the flash may be replaced by a "fire-ball," moving slowly about in very alarming style and then exploding with a loud report. Exceptional, too, is a more tranquil form in which the electricity in the air displays itself as a glow on the mast-heads and rigging of ships, on horses' ears and even on human heads. Disconcerting as this St. Elmo's Fire may be, it is neither painful nor dangerous, merely producing a slight tingling felt by the person on whom it alights. Apart from the roar of the thunder, the beating of the rain may also be listened to; at each flash the drops become bigger and appear to fall faster and to the discerning ear it distinctly changes its rhythm.

Ball lightning and St. Elmo's Fire are by no means the only features of the weather which seldom visit us. However we grumble at our British climate, we may well be glad that it is usually free

from the disasters which it sometimes visits upon the peoples of less favoured lands. Seldom indeed are our islands visited by the dread tornado, which has produced such devastation in America and elsewhere. A huge vortex or whirlpool is produced high in the air, stretching down towards the ground as a black funnel-shaped cloud, ripping houses, trees and buildings from the earth and hurling them aloft, and travelling across the country with the speed of an express train. When its tip passes not over the land but across the sea, the vortex is less destructive; it is then the waterspout, a swirling column of mist and spray joining the ocean with the clouds. These are seldom seen off our own shores--but last summer visitors to a south coast seaside resort had the pleasure of seeing half a dozen at once!

Wayfarers one evening in 1938 were startled to see wavering bands of colour



A SOLAR HALO

In the above photograph is seen the upper portion of a ring or halo round the sun. An old saying is "The bigger the ring, the neurer the wet."



A SUN PILLAR

This curious phenomenon is caused by reflection of rays from the sun by the ice crystals present in the cloud layer.

appearing all across the sky. Very seldom indeed does the aurora borealis, the "northern lights," appear so far south and with the brilliance that it displayed then. Those who visit Scotland and more northerly lands may behold it as a sort of curtain of shifting colour gleaming against the northern sky.

Not as rare as the aurora, but very seldom seen, is the green ray which appears at sunset just at the moment that the sun vanishes behind a sea horizon. On the opposite part of the sky, too, we may sometimes be able to catch a glimpse of a dark vague band along the east horizon—it is the shadow of the earth thrown by the sun upon the air. But these appearances, like the false dawn and the afterglow, which we may see just before sunrise and after sundown, are matters rather for astronomy than the study of the weather. One astronomical phenomenon, however, we must notice because of its value as a weather

sign: when we see "the old moon in the new moon's arms," the dim image of the moon continuing the circle formed by the bright crescent, it is a sign of rain. Like the mate of the *Hiawatha* Sir Patrick Spens' seaman in the ballad feared the moon as an omen of dread:—

"I saw the new moon late yestreen, Wi' the old moon in her arm; And if we gang to sea, master, I fear we'll come to harm."

The astronomer, too, will tell us just why we have the seasons in their due order, because the carth is somewhat tilted obliquely to the circle along which it yearly travels round the sun. For this reason, we to the north of the equator come more directly under the sun's rays in summer and less in winter, so that we get the alternation of hot season and cold season, with the intermediate periods of changing in between.

Our year begins in the winter, when the cold winds blow, the mercury in the thermometer creeps downwards towards the bulb, and maybe, the fields are covered with snow and the ponds with ice. True, the turning-point of the season has passed, and every day sunlight appears a little earlier, tades a little later, than the day before. But:—

"As the day lengthens:
So the cold strengthens."

February Fill-dyke

We are by no means out of the winter yet. February follows, cold and drear but mostly dry. "February fill-dyke" is a proverb not of what the month does, but of what the farmers would like it to do.

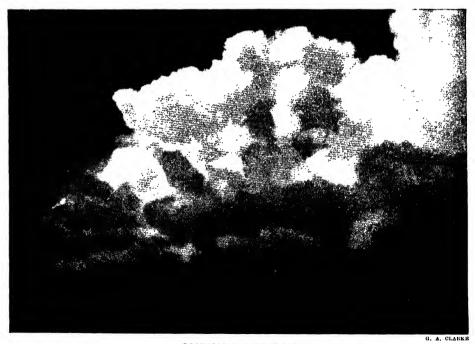
March "comes in like a lion" with its buffeting winds, its dryness and its cold. It may bring snow and tempess with it; it may bring abundant sunshine, but usually it does not. Yet its very roughnesses are themselves a hopeful sign: the parts of the earth that were the coldest are now beginning to warm, and the process produces violent movements of the air. However bleak March

may be, the winter is over, and the spring is come, spring, the season of budding leaf and flower, of bird emerging from the egg, of new-born lamb. Soon, as in the days of old, the greatest religious festival of the year will celebrate the coming of new life to the world, and the churches will be decorated for the Easter service.

"March winds and April showers bring forth May flowers." The blustering gales die down, give place to an inconstant weather full of surprises, of sunshine and rain, of warmth and frost: "The Spring she is a young maid, who does not know her mind." Yet in spite of all apparent set-backs, the weather is improving. More and more we are tempted out into the open, feeling the call of the new life even in our drab mechanical towns. Well in May comes a "cold spell," as though the winter were making one last assault on us before shrinking away defeated. But with the passing of the

month the most timid and conservative will have regarded the warm weather as arrived at last: "Cast ne'er a clout till May be out." Some people, it should be mentioned, interpret this as referring to the appearance of May, or hawthorn blossom.

" June 21, summer begins; June 24 Midsummer Day," so the old-fashioned almanacs used to inform us. At times we may have felt there was an unpleasant truthfulness about this, particularly when we have suffered from an unsettled and rainy summer, but certainly June is often one of the warmest and sunniest months of the year. Now is the time that man? of us, should we be free to do so, choose to make for the country or the sea. When school vacations are "staggered" so that August is no longer the family holiday month no doubt many others will seek to enjoy the early summer when the freshness of the spring has not yet given place to torrid sunshine and dry air.



CUMULO-NIMBUS

Clouds of this type are like the ordinary cumulus above, but have a dark nimbus below from which rain falls. They usually occur at a height of four thousand to six thousand feet.



THUNDER APPROACHING

G. A. CLARKE

An excellent study of an advancing bank of thunder-cloud with its sunlit edges contrasting strongly with the dark, threatening under sides.

Midsummer Day is the turning point of the hot season, and now the days slowly contract.

Over most of Great Britain July is the warmest month, though on the southern sea coast that honour falls to August. Both months, however, can be cold and wet, as some of us have reason to know. The sea, slower both to warm and cool than the land, acts as a sort of "brake." Now is the season, on the other hand, of thunderstorms, for the most part, fortunately, harmless enough.

Indian Summer

September ushers in the "fall" of the year, when the leaves drop from the trees and when the farmer gathers in the golden crops. It is a time of gentleness, of pleasantness, between the scorching heat that has gone and the bitter cold that is to come. Now, and in October, we may feel the chill threat of winter in the air, but before it descends upon us there may be several periods of delightful warmth: "St. Martin's Summer," the "Indian Summer," call them what we will. And meantime the sea still retains some of its summer's heat.

But then comes November, and with November comes the fog. All the leaves are shed now: the world is preparing for its winter's sleep. With December our feelings are divided: while we shrink from the frost and snow, we are apt to feel vaguely cheated if we miss a good old-fashioned winter with snowballing and skating and all that. In the ordinary way, the month is certainly bleak and dreary enough. We might easily persuade ourselves, given a little imagination, that the sunshine was gone for ever, that never again would the earth re-awaken to springtime and life. So we can understand the diligence with which the wise men of old scanned the sky, the joy with which they saw that the sun had reached its southern turning point and was slowly

moving up the sky. To this day we keep, as another Christian festival, a time far older than Christianity as our season for merriment and rejoicing in the midst of the gloom, the ancient Yule with its traditional blazing fire and its mistletoe bough.

· Weather Portents

The changes in the weather, casual as well as seasonal, show themselves in the living things which depend so much upon them. Many are the sayings come down from those who lived and worked in the midst of the weather and had need to study it most, the farmers and the shepherds and the seafaring men: some of their sayings we have already quoted, their forecasts of storm or sunshine, rain or wind. The very stones may serve to forewarn us of coming rain. Here and there we may find a paving stone, or a piece of stone in a wall, which differs somewhat from the other stones around it and which gets dark and damp-looking

when the air is laden with moisture.

More responsive to weather changes are the plants. A flag of seaweed hung on the wall will turn harsh and dry in fine weather, becoming moist and soft and pliable when rain is nigh. Nor is this surprising, for amateur photographers know that a long slip of celluloid film is harder to handle in the dark room at some times than at others, and when the air is damp it twists and cockles up.

The "poor man's weather-glass" is the scarlet pimpernel. Long ago the countrymen noticed, and since then students have verified, that this little flower is sensitive to changes in the air, opening when it is dry but closing as it accumulates moisture, presently to be discharged as rain. Sensitive, too, are the daisy and the chickweed, which open and close for dryness or dampness in much the same way.

Not all these plant traditions are reliable. Which of the following sayings,



SUMMER SHOWERS

In this photograph of a passing storm we see the high piled billowing thunder-clouds with a dark base from which a shower of rain is falling on the left.

both heard in the country, is true? Observant lovers of the outdoors may perhaps be able to decide—or does it vary in different parts of the land?

- "When the ash before the oak
 Then the summer's all a soak.
 When the oak's before the ash
 Then the summer's but a splash."
- "Oak before ash, all wet and splash.

 Ash before oak, all fire and smoke."

If plants are sensitive to weather changes, it is only to be expected that animals would be more sensitive still. Many creatures show unusual activity; as though forewarned by uneasy feelings of hard times to come they forage about in search of food. Rooks, so the countryfolk, say, are especially sensitive. If they fly low, it means rain; if they feed busily and hurry about together, a storm is likely; if they sit about on fences, or dart down and wheel about, expect wind.

Before a storm, the seagull ventures farther inland:—

"Seagull, seagull, sit on the sand, It's never fine weather when you're on the land."

Warnings of Rain

In advance of rain, too, it is said, geese cackle and crickets chirp, asses bray and cocks crow, frogs croak and ducks quack. Spiders emerge from their webs and flies and gnats are active, while in chase of the flies the fish rise to the surface of the stream. The household cat washes itself more carefully even than usual, paying particular attention to its face and cars. When it sits with its back to the fire, by the way, it is said to be a sign of frost; and when the ship's cat frolics about, the sailors hold, he has "a gale of wind in his tail."

Many people, too, feel the weather in their bones. Just as they are uneasy and oppressed before thunder, so they



PASSING OF THE STORM

Here we see the rear of a large cumulo-nimbus cloud retreating over the sea. On the right rain is still falling from the base of the cloud,



DAWN PAGEANTRY

A beautiful study of early morning clouds, the under surface of which is lit up in ripples of rosy light by the sun which has not yet risen above the horizon.

vaguely sense the coming rain. The feelings may take a more painful form, their rheumatism giving twinges and their corns shooting, and old wounds and scars may also ache.

Some of these signs were neatly summed up by an eighteenth century doctor:—

"The hollow winds begin to blow, The clouds look black, the glass is low. . . .

Last night the sun went pale to bed, The moon in shadows hid her head. . . .

The walls are damp, the ditches smell,

Closed is the pink-eyed pimpernel. Hark! how the chairs and tables crack,

Old Betty's joints are on the rack.... Loud quack the ducks, the peacocks cry,

The distant hills are looking nigh....

Puss on the hearth, with velvet paws, Sits smoothing o'er her whiskered jaws. . . .

The glow-worms, numerous and bright,

Illumined the dewy dell last night....
'Twill surely rain: I see with sorrow
Our jaunt must be put off tomorrow."

Leech Storm Glass

Perhaps the most original weather sign, though, was seriously put torward last century. Observing that leeches in a bottle rise to the surface and wriggle about before bad weather, a Mr. Merryweather drew up a little chart to show their positions for sunshine, rain, or storm. He arranged a contrivance so that one or other of a dozen or so of them would ring a little bell when they rose to the surface as a warning of a tempest; he exhibited his leech storm glass at the Royal Exhibition of 1851, and suggested that the Admiralty should

install such instruments at the look-out stations along the coast!

We in these islands are apt to speak disparagingly of our own climate:—

"The South wind always brings bad weather,
The North brings wet and cold together.
The West wind always brings us rain,
The East wind sends it back again;
If the sun in red should set,
The next day surely will be wet;

If the sun should set in grey,
The next will be a rainy day."

In spite of such cheerful forecasts, those who have fared forth into the countryside know that our climate is

Moreover the bad weather, the wind and the rain and the frost, have their own joys for those who dare to face them. They have played their part in moulding both the history and the character of our

better than the town-dweller may think.

island-dwelling race. Let us conclude like Kingsley, by singing the praises of the worst feature of our climate, the wild north-easter itself:—

"'Tis the hard grey weather
Breeds hard English men....
But the black north-caster,
Through the snowstorm hurled
Drives our English hearts of oak,
Seaward round the world....
Come; and strong within us
Stir the Viking's blood;
Bracing bone and sinew;
Blow, thou wind of God."

There is many a day which appears dull and dreary in the town, but which, away from the smoke and polluted atmosphere, is a day of delightful aspects. Sometimes we may leave the murky gloom of the city and find in the country that sunshine is chasing the rain showers and dappling the landscape with combinations of light and shadow.



NIGHTFALL

An evening photograph of the sky at sunset showing a large lenticular cloud over the sea. Clouds of this type, broken up into small fleecy masses, are known as cirro-cumulus.

RIGHTS OF THE WAYFARER

by TOM STEPHENSON

A sold and often amusing game consists of asking a person to define on the spur of the moment some term of everyday use. Probably very few people at short notice could give a correct explanation of such a common word as "Highway." It is not,

for instance, generally known that the term covers a minor footpath, open to the public as well as a busy arterial road.

Any one who travels through the countryside will find it useful to know what is considered a highway in law, and also to be acquainted with a few legal facts which will enable him to enjoy his legitimate rights, and at the same time to know what he may not do without infringing the rights of others or actually breaking the law.

In the following paragraphs we have sought to explain, as far as possible without

legal jargon, some of the things the wayfarer may and may not do, and what he may, according to law, expect to be done for the convenience of his journeying.

Let us then, first of all discover what is meant by a highway. The Highways Act of 1835 used the term as including "all roads, bridges (not being county bridges), carriageways, cartways,

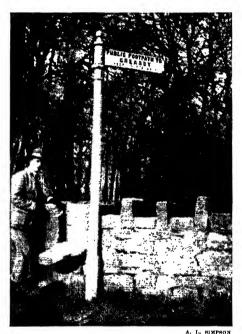
horseways, bridleways, footways, causeways, churchways and pavements." This catalogue, however, does but enumerate some highways. It does not tell us what constitutes a highway.

The essential feature appears to be that it is a thoroughfare or strip of

land over which the public may lawfully pass at any time. The public right, it may be emphasized, is merely right of passage, and conters no ownership or the privilege of doing anything but passing to and fro along the highway.

For our purposes, we may recognize three types of highway. First is the public road or carriageway. On this we may travel on foot, on horseback, or on any vehicle which is permitted on the roads. Secondly, comes the bridleway which, as the name suggests, is one we may follow on horseback.

on horseback. A bridleway is also open to the foot passenger, but is not available for any vehicle, and in all these matters a cycle is considered a vehicle. To take a motor cycle along a bridleway is, in addition, a criminal offence under the Road Traffic Act, 1930. Fond fathers, however, may note that a perambulator has been held to be a usual accompaniment of a foot



MARKING THE WAY

Many footpaths would be used more if they were adequately marked. Preferably this should be done in a less unsightly manner than in the above example from Cheshire,

passenger, provided it does not inconvenience other foot passengers or injure the soil. Thirdly, we have the footpath or footway which is available for pedestrians only, and not for horses or vehicles of any kind.

In these days it is not always easy to distinguish a bridleway from a footpath. The Highways Act, 1835, specified that a bridleway must be eight feet wide, and any gates across it must be five feet wide. A stile obviously would not be permissible as it would bar the passage of a horse. Footpaths at the side of carriageways or roads must be three feet wide, but nothing is said about the width of field paths.

What is a Right of Way?

When we go into the country we may occas onally have some difficulty in determining whether an apparent path is actually what is known as a right of way. We may see a stile on the road-side giving access to a field across which there is a well-trodden track. That seems evidence of public use, yet near the path there may be a notice saying, "Trespassers will be Prosecuted."

Sometimes one may see such a notice with another nearby saying, "Footpath to Blankham." In all such cases one, of course, accepts the latter as the true indicator. The fact is that it is not an uncommon practice to creet a prosecution sign near a public path for the purpose of deterring strangers from passing that way.

If we consult the one-inch Ordnance Survey Map it may show the path in question, and that seems conclusive, but then we remember reading in the map margin a statement that The representation on this map of a Road, Track or Footpath, is no evidence of the existence of a right of way. You might well say how am I to know what is a footpath, and what use is a map which shows a path and then implies that it might not be a path?

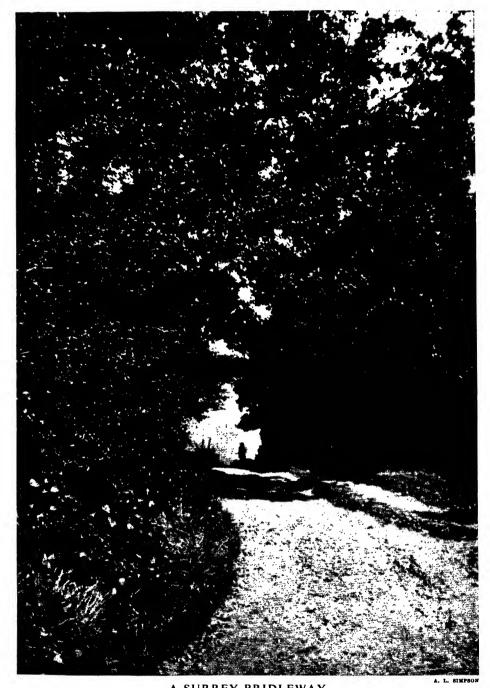
In practice the qualifying statement of the Ordnance Survey may be regarded as a safeguarding clause to absolve them from being involved in any footpath litigation. A road or track shown on the map may be a private road to a farm or dwelling. A path which is shown, may, however, generally be presumed public. On the other hand, the fact that a path is not shown on the map does not mean that such a path is not public.

If a path is furnished with stiles and gates, and if there is no notice stating it is private, it is usually safe to assume it is a right of way. In the odd case where you may be following a private path with stiles for the convenience of gamekeepers or farm servants, a courte-ous approach may smooth your way should you be challenged.

At the worst it should be remembered that for inadvertently intruding on a private path you cannot be boiled in oil, flung in prison or even arrested. All the owner or his agent can do is to ask you to return to the highway, but if you refuse to do so the law permits the use of sufficient force to eject you. Therefore, unless you are certain that you are on a right of way, and unless you are determined enough to assert your right of passage, the wiser course is to withdraw when requested to do so.

Origin of Footpath

To determine whether a path is public is no easy matter, although the procedure has been simplified somewhat by the Rights of Way Act, which came into force in 1934. Much of the difficulty arises from the legal theory of the origin of footpaths. There are two ways in which a highway may have originated The first and simplest case is where a highway has been established by statute Thus, in the past, when an award was made for the enclosure of common land it was sometimes stipulated, as a condition of the award, that there should be a public highway across the enclosed land. A highway may also have been created under some such Act of Parlia ment as the Town and Country Planning Act, 1932, or the Development and Road Improvement Funds Act of 1909.



A SURREY BRIDLEWAY

By law a bridleway should be not less than eight feet wide. Above is an example of such a way on the downs near Epsom.

Apart from highways established by statute, the law maintains that all others have been created by what is known as dedication and acceptance. According to this belief every highway not of statutory origin has been dedicated by

some previous landowner.

When our prehistoric ancestors first began to roam the land they were untroubled by any question of right of way. Their routes were determined by their needs and the features of the landscape. A long range of downs provided for them a natural highway, and some of our most ancient tracks such as the Icknield Way, the Ridgeway along the Berkshire Downs, and the so-called Pilgrims' Way from Canterbury into Hampshire, probably had their beginnings in pre-Roman days.

The Pathmakers

Centuries later our veomen forefathers behaved with similar freedom, only being limited by respect for growing crops. When they had to journey from their own hamlet to the next they took the

easiest way, skirting a swamp or the edge of a wood, crossing a stream at its most convenient point, and perhaps making a detour round the arable fields. By experience they established the easiest line, which by frequent use eventually became defined as a path.

The ploughman making his way across the fields to the church or the village inn, the travelling tinker and pedlar, the drover and other wayfarers, without any regard for lawyers' notions, trod out the routes they found best

suited for their purposes.

When lack Robinson of Little Oakham went courting Sally Barnes of Much Wenton, he knew the most direct way between the two places. He also knew his way round by Copy Nook, across the Ox Leazes and down into Dinkley Dell. Such were probably the origins of most of our paths, but the law insists that for a path to have been established as a right of way, some landowner at some time must have dedicated the right, and the dedication must have been accepted by the public.



BEWARE OF THE BULL

The scratched stones in the wall suggest this is a well-trodden route despite the warning notice which is evidently intended to deter timid people from using the right of way

From this assumption have arisen many difficulties in the past when it has been sought to prove rights of way. When a landowner tried to close a path which had been deemed public, it was necessary to establish that a path had been used so long without interference as to warrant the inference that some former landowner had dedicated a right of way.

For this reason we used to read of the oldest inhabitants of the village being taken to court to testify that as far back as they could remember people had used the questioned path. "Granfer Cantle" might declare that he used the path as man and boy, and so did his father before him. He might tell of walking on it when he was courting his Sarah Jane, and how on Sunday evenings in the summer time they used to sit on the stile on the far side of Cowslip Pasture.

The Rights of Way Act of 1934 has simplified this procedure. It defines a period of twenty years of undisputed use of a path over land of absolute freehold as sufficient proof of dedication, unless there is evidence that during that period there was no intention to dedicate. Where the land is held, or has been held, by a tenant for life or by an otherwise limited owner, the qualifying period is fixed at forty years.

Proving Rights of Way

If the provisions of this Act were adopted by all our local authorities, the process of proving a right of way would be even simpler in years to come. Under the Act a court may consider as evidence maps, plans, local histories and other documents not previously admissible. For this reason it is highly desirable that every parish council should survey its area and mark on a large scale map all paths believed public. Landowners are empowered to deposit maps of their estates with the district or county councils indicating the paths they admit to be public. Such maps should be carefully scrutinized for the omission of any paths, for if the council has failed



E. ROYOM

COME TO SCOTLAND!

Although attempts are made to induce people to visit Scotland, notices such as the above

are not encouraging. A photograph taken on Glen Einich in the Cairngorms.

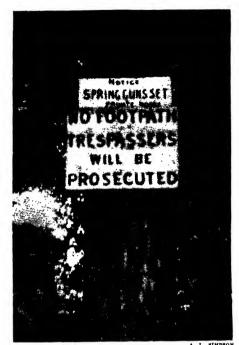
to compile its own map then the landowner's defective map, on some future occasion, may be accepted as evidence of the absence of a right of way.

Many difficulties would at once be removed if all public footpaths were signposted as such. A few parish councils have already done this, and Essex County Council has done so for the whole of the county. If other counties did likewise they would be performing a most useful service.

It is as well to know that a right of way cannot be lost to the public by lack of use. In some parts of the country once well-trodden paths have become overgrown, and in places obliterated. Stiles may have disappeared or become broken down, but however long the path may have been out of use it remains a right of way, for "once a highway always a highway" is an old doctrine, and a true one, unless the path has been closed or diverted by legal process.

Where a path disappears due to natural causes, as along the edge of a cliff or river bank which suffers from erosion, the public cannot claim legal right to walk farther inland.

In all other cases certain legal procedure is necessary to close a path.



AN ILLEGAL NOTICE
This notice from Hertfordshire is probably a piece of bluff, for it is illegal to set spring guns or man-traps of any kind.

Rural paths near to land held by the military authorities may be closed by them, subject to agreement with the district council. The Town and Country Planning Act, and various Housing Acts, also provide for the closure or diversion of highways. Acts promoted for public undertakings such as gas or water works may also confer power to close rights of way over land compulsorily purchased.

Apart from such instances permission to close or divert a path can only be given by the Quarter Sessions, and only then after a long and complicated procedure has been followed. Before reaching the sessions a request for closure or diversion of a rural path must have been sanctioned by the county, the district, and the parish councils, and it is with the parish council that an important safeguard is provided. The parish council before considering an application for closure must display a

notice of the business three days before the meeting. If the council assents to the closure, the resolution must be confirmed not less than two months later.

In that interval a parish meeting may be called at the request of the chairman, any two members of the council or any six local government electors of the parish. Such a meeting has the right to veto the decision of the council, and if that is done the application can go no farther. It is obvious, therefore, that where the parishioners are sufficiently alert they may save their paths from being closed in this manner.

We have mentioned the "Trespassers will be Prosecuted" notice often seen alongside a path. Sometimes we see a statement "This Land is Private." Such notices, for what they are worth, may apply to the land, but be quite irrelevant as regards the path. Again, we may see the notice "Private Road." Such a road may be private, as far as vehicles



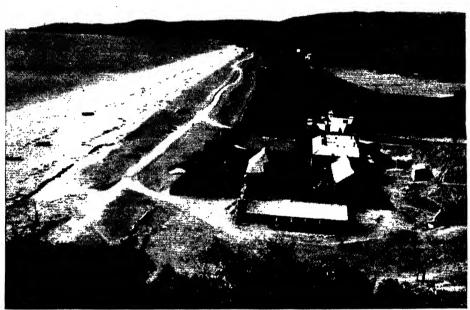
In the turnpike days tolls had to be paid by road users. Above is a photograph of a toll-bar on the Bath Road near Newbury.

are concerned, yet may be a right of way for pedestrians. This we can usually only ascertain by local inquiry. All such ambiguous notices should be countered by "Public Footpath" signs erected by the local authority.

The "Trespassers will be Prosecuted" sign is a familiar landmark of the English countryside, and it is as well to know just how much it is worth. We cannot

continued since though the Act has long been repealed. People know the notices cannot be enforced. I trespass about once a week."

Many of these signs have been erected to prevent people establishing a right of way by undisputed use. The existence of such a sign does not mean that any passing policeman can arrest you for being on the adjacent land. Actually



SEASHORE RIGHTS

W. F. TAYLOR

Contrary to common belief the public have no general right of access to the foreshore. In many places, however, fishermen and local people have acquired the right by long usage, and the privilege is often enjoyed by visitors. Above is a photograph of Beesands, Devon.

do better than quote Mr. Justice Mackinnon on this point. In a case heard at Chester Assizes he said: "There was an Act passed in the reign of George II, which made it an offence if you trespass after being warned not to do so. Consequent on that Act all landowners put up these notices, because they were a substitute for warning, and if there was trespass afterwards there was an offence. The result is that these notices have

the landowner's only remedy is to apply in a civil court for damages against the trespasser, and generally it would not be worth his while to do so, for the damage might be assessed at a very nominal figure. Where, however, real damage is proved to fences, gates, growing crops, cattle or other live stock, then of course, he may rightly expect to recover any loss he has sustained. Action for trespass in pursuit of game,



ASSERTING A RIGHT OF WAY

Sometimes attempts to close footpaths arouse considerable public feeling and demonstrations are organized and large numbers of people walk the disputed path in assertion of their rights. A Yorkshire instance of this is seen in the above illustration.

will also usually mean a heavier penalty. In Scotland the law is somewhat different. In the Highlands especially there are many notices warning visitors they are not allowed on the hills. On grouse moors and in the deer forests may be seen warnings of the dangers of trespassing. Such notices, however, have no legal backing. A proprietor may ask an intruder on such land to withdraw, but the law does not permit the owner to eject any one by force, and a person injured by such use of force, may sue for damages.

Owners' Rights

The owner may claim for damages done to crops, stocks, fences or game, and he may apply for an interdict against any one passing over his property. This, of course, is a roundabout remedy, and not likely to be applied in ordinary circumstances. If an interdict is granted the offender may be liable for the expenses of the action, and should he afterwards ignore the interdict he may be sentenced for contempt of court. It might be accepted as a defence that the intrusion was committed quite innocently, and

is not likely to be repeated in the future.

According to ancient law the inhabitants of each parish were responsible for the repair and maintenance of the highways within their boundaries. Today, though the ultimate liability may still be on the inhabitants, the work is or should be undertaken by the highway authorities of borough, urban and county councils, though probably the latter may delegate the work to the rural district councils.

Parish councils may undertake the repair of any public footpaths, but not bridleways, in their area which are not footpaths at the side of a public road. They may also undertake the repair of stiles and gates on footpaths, provided that they do not enlarge public rights without the landowner's permission. Thus they could not substitute a gate for a stile or replace an old stile by a lower one. On the other hand the landowner may not take away a gate and substitute a stile or crect a stile which would increase the difficulty of passage.

Any obstruction across a right of way may be removed by individuals or by

officials of the district council. Although there is considerable satisfaction in thus asserting one's rights, it is important there should be no doubt of the path being public. Otherwise such action may involve one in heavy damages. Where such obstructions are found, the wiser course is to report them to the parish council, and to the Commons, Open Spaces and Footpaths Preservation Society, 71, Eccleston Square, London, S.W.1.

The parish council should bring such cases to the notice of the district council, for that body has a statutory duty to take proceedings, and if it fails to do so the parish council may appeal to the county council.

Ploughing Paths

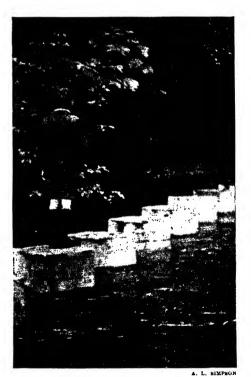
A common experience is to find a footpath across arable land has been ploughed over. As far back as 1669 it was held that it was an unlawful act to plough up a public footpath which had never before been ploughed. If it can be shown that over a long period it has been the custom to plough the path, it may be assumed that the path was originally dedicated with a reservation of the right to plough. Should the field have been under grass for many years and then have been ploughed, unless the farmer could show that the dedication of the path was subject to right of ploughing, he would be liable to a fine.

Barbed wire is another nuisance against which the law provides, and it is illegal to place such wire alongside a highway in such a manner as to be dangerous to the public. A person who receives injury from barbed wire in such situations may claim damages. In one case a gust of wind blew the plaintiff's coat against a barbed wire fence at the side of a path, and it was ruled that he was entitled to recover damages.

Where barbed wire is erected at the side of a highway, the district, urban or borough council, as the case may be, may serve notice on the occupier to abate the nuisance. Should he fail to do so further action may be taken.

Sometimes we see notices "Beware of the Bull." If there is a bull or any other dangerous animal at large in a field through which runs an unfenced highway, the owner would be liable for any damage it might do to users of the highway. Many county councils have prohibited bulls over one year old being turned into fields through which there is a right of way.

It is commonly assumed that the public have a right to walk across or along the foreshore, that is along the ground between high and low water mark. The law does not recognize any such right, and the foreshore may be under private ownership. Frequently, however, the local people, as fishermen or in other capacities, have acquired rights of access and such rights are generally recognized as available for visitors.



ACROSS THE RIVER

Modern stepping stones which took the place of much older ones across the River Mole, at the foot of Box Hill in Surrey. There is also widespread misunderstanding about rights which may be enjoyed on common lands. These commons were originally the waste lands of the villages on which the local people or commoners exercised certain rights such as grazing cattle, or gathering wood or peat for fuel, and bracken or heather for litter and bedding.

Today, on such commons as persist,

for air and exercise. Further, any common land in a rural district might be brought within the scope of the Act by the execution of a deed by the owner or lord of the manor.

It must, however, he emphasized that the Act only provides right of access for air and exercise. The Act states that "such rights of access shall not include any right to draw or drive



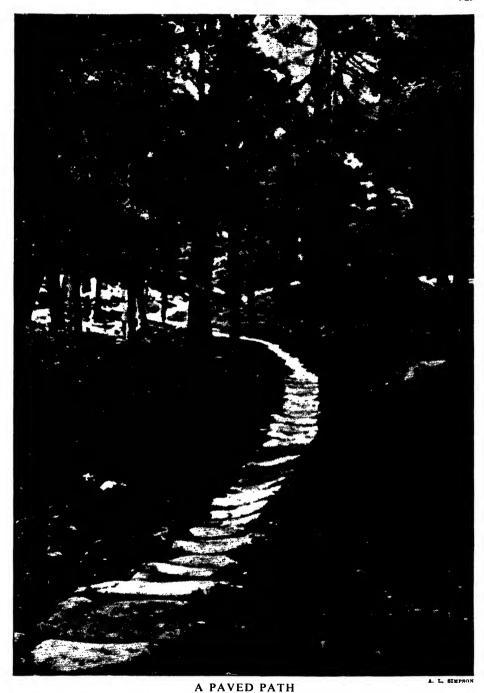
A GIPSY ENCAMPMENT

Camping on roadside wastes, or on any other land, without the owner's permission is illegal. Gipsies, however, make a practice of pitching their tents and caravans by the roadside. Above is seen an encampment in a country lane in Hertfordshire,

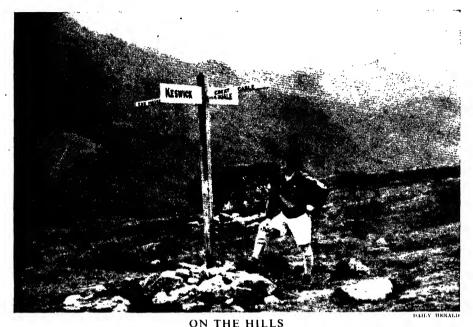
the commoners may enjoy their ancient rights, but the public at large may have certain privileges. The Commons Act of 1876 made it possible to enclose and manage commons in the interests of health, comfort and convenience of the inhabitants of any cities, towns, villages, or populous places in or near the parish in which the common was situated.

The Law of Property Act, 1925, went a step farther, and provided that all commons, any part of which was within the metropolitan area or within the boundaries of a borough or an urban district, should be open to the public upon the land a carriage, cart, caravan, truck or other vehicle, or to camp or light any fire thereon, and any one doing any of these things may be liable on conviction to a fine not exceeding forty shillings for each offence." Where the common is regulated by conservators or by the local authorities, there may also be other by-laws in force.

Motorists should particularly notice that they cannot drive their cars on to common land. They should also remember that the Road Traffic Act, 1930, also provides that "any person who drives



Where stone is plentiful it is often used to pave paths over wet ground as seen in the above photograph of a Yorkshire woodland path.



We do not usually expect to find signposts on the mountains, but in the Lake District there are a number of them at high altitudes. The one above is at the summit of Sty Head, one thousand six hundred feet above sea-level.

a motor vehicle on to any common land, moorland, or other land, or any road which is a bridleway or tootway, shall be guilty of an offence, and liable to a fine up to £5, and subsequently £10. This does not include land within fifteen yards of a road being used for the purpose of parking vehicles."

Campers and the Law

Some campers also have mistaken notions about common land, and wrongly assume that they may camp on such land without permission. They have, as we have stated above, no such liberty. Nowhere, in fact, has one any legal right to camp without permission. While this may be the law, in practice, of course, many people do camp without the owner's consent. Gipsies and others, for instance, ignore the law and pitch their tents on roadside wastes and on any odd strip of green that takes their fancy. Campers also in quiet, out of the way places, often camp for a night

without seeking anyone's permission. In many places there is no likelihood of interference, but in such circumstances it should always be remembered that you are only there by privilege and not by right.

In Scotland one often sees along the roadside notices inscribed "No Camping." Under the Scottish Trespass Acts, it is technically a criminal offence to camp on private land without the consent of the owner. These Acts were originally directed against squatters and persons sitting in possession of land, and persons lighting fires or pursuing game. Where such offences are committed the owner may call in a police officer to apprehend the offender. The law appears to be largely ignored by tinkers or pedlars in the Highlands, but they have probably learned by experience where they are likely to be left undisturbed. The casual camper may also find in practice that the law is not rigorously enforced. At the same time, where one is aware of

a prohibitive notice the powers of the owners should be borne in mind.

Campers in England and Wales must also remember the restrictions imposed by the Public Health Act, 1936. This provides that unless an occupier of land obtains a licence from his local authority he may not allow his land to be used for camping on more than forty-two consecutive days or more than sixty days in twelve consecutive months.

Local Restrictions

Before granting such a licence the local authority may require certain arrangements for sanitation and water supply. In some popular districts this may restrict the scope of the camper, but elsewhere he will experience little difficulty in finding sites not so much in demand as to require a licence.

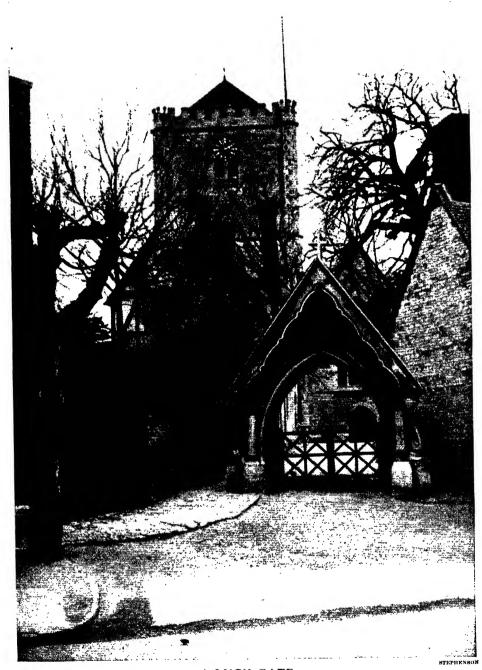
A number of counties now have by-laws prohibiting the depositing of litter, or the uprooting of wild flowers and growing plants. No reasonable way-farer will object to such legislation. Most of us regret that it should be necessary, and that there should be people so lacking in consideration as to disfigure the countryside with rubbish, or lessen its beauty by gathering flowers on such a scale as may ultimately lead to the extermination of those species.

Throughout this article we have been continually referring to rights and legal provisions. It must, however, be stressed that when we go into the country, while conscious of our own rights, we should ever be equally concerned with the rights of others. If we travel with such consideration in mind it will generally be found that courtesy accomplishes more than arrogance, and that mutual toleration is likely to achieve more than unreasonable insistence on obedience to the strict letter of the law.



A LAKELAND ROAD

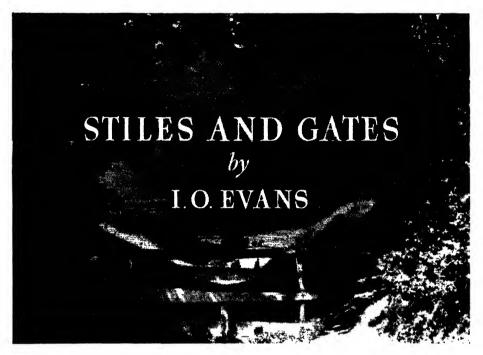
In some parts of the country gates are found across the road. The purpose of these is to prevent sheep and cattle straying. Wayfarers should always be most careful to close such gates securely behind them. In the above photograph is seen the road to Buttermerc from Newlands, with Robinson rising picturesquely in the background.



A LYCH GATE

A common feature in bygone days was the lych gate at the entrance to the churchyard.

Above is seen an example at Dorchester, Oxfordshire.



HAT would the countryside of Britain be without its footpaths, those pleasant tracks which run through the fields, along the river, across the commons, or up the mountainside? And what would the footpaths be without their stiles to which they run, through which the wayfarer can pass from field to field, those narrow gaps, those steps with their crossbars to be straddled, those tiny gates that shut and open with a metallic clink? Without them, surely, the country might be a place for growing corn and breeding cattle, but it would not be the countryside that we know and love so well.

Farmland, wherever it may be, needs footpaths for those who cultivate it, the woodlands and the wild need footpaths for those who travel through their depths. The footpaths, then, are older and more necessary to mankind than are metalled roads. Strange as it may seem, there are more miles of path than of roadway in these islands. We find footpaths in every land. But the stiles of Britain are peculiarly Britain's own.

Those who have travelled on the Continent will realize that a countryside can be tilled and pastured with very little use of hedges and walls. Foreigners, on the other hand, express surprise at our own system of covering the country with such barriers between the fields. They think this method is wasteful, and so no doubt it is from the point of view of production alone. Yet there are other things to consider in a countryside than productive power. Our little fields, our hedges and walls and fences, are part of the British tradition, are part of the British scene.

The hedges separate the meadows and keep the cattle or the sheep from going astray. But they must not hinder the farmer as he goes about his daily tasks. In some manner he has to devise a means of crossing the barrier expeditiously without letting the sheep or the cattle pass through. Many and various are the ways that our ingenious forefathers devised, the means that are still in use today and that lend an added attraction to our native country walks.



A CURIOUS COMBINATION

Above is seen a stile surmounted by a gate at Frant, Sussex.

The most obvious barrier would seem to be a gate. But gates and doors, common and common-sense as they are, are rather complicated objects, with their strong posts and frames, metal hinges and secure bolts. Though their origin is lost in the mists of antiquity, it is hardly likely that they are as old as farming and farm hedges themselves.

The Farmer's Problem

Though it may not be the oldest, the simplest method of crossing a barrier is surely to leave a gap in it. The gap must permit the farmer and his dog to pass, but must bar out the beasts he tends. A cow is bulky, and cannot traverse a gap wide enough for the stoutest man, but sheep are little more bulky than men or dogs. How was this problem to be overcome?

The ingenious mind of the early

farmer succeeded in overcoming it. The sheep's body is at its broadest much nearer the ground than is a man's. So is the dog's, but then the dog can jump. So by means of a "V" shaped gap, narrow at the bottom but widening at the top, the farmer could make his way easily into and out of his fields, and have his trusty sheepdog bound after him, happy in the knowledge that his sheep were quite secure.

We find these "V" stiles in many counties and in several different types. They are used in hedges, in wire fences, and in stone walls. The two arms that form it, sloping outwards in opposite directions, may be built of wood, as in the home counties, or of stone, as in Derbyshire. They may be rounded poles, with the wires of the fence braced directly on to them, as in Middlesex. They may lean against two far

stouter uprights, which form the supports of a wooden fence, as they do in Kent.

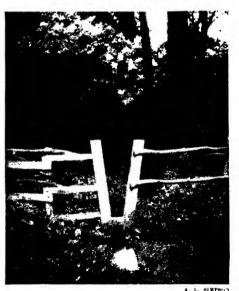
Facetious countryfarers say that a gap of this type has in some parts of the country a smaller gap beside it, the larger one for the man and the smaller for the dog! This may certainly be a correct view, but it does suggest the story told about Sir Isaac Newton, that, worried at having to interrupt his work to let his pets in and out of his study, he had two holes made in its wall, a large one for his cat and a tiny one for his kitten!

Staggered Barriers

Sheep are not the only things that a farmer wishes to keep in their place. He may wish to keep horses, straying or ridden, or cyclists, off one of his wider paths. For this purpose he may have a staggered barrier, two short lengths of railing projecting from one wall and another from the opposite wall between them. A man can walk quite easily through the zig zag gap thus formed, but the sudden turns are battling to cyclist or horse. In mountain country a half-circle of great stones is often found, with another projecting from the opposite side of the way into their midst.

The wanderer into the West Country is surprised to find gaps in the hedges far wider than those to which he is accustomed, so wide indeed that a farm cart could be driven through them. Yet somehow the sheep do not seem to try to cross them. When he comes nearer he finds that they are no ordinary gaps. Several slabs of stone lie parallel from hedge to hedge across the footpath, sunk so that their tops are on ground level, and with spaces between them as wide-perhaps a foot or so-as themselves. He may be bewildered by this gridiron arrangement until he is told that sheep cannot cross them, because they step in between the slabs, miss their footing, get alarmed, and hastily turn back. Yet a man can step, and a dog stretch, from one to another, without hesitation and with the greatest of ease. These stone slabs are found for the most part in Devon and Cornwall, where they are as much a feature of the countryside as the commonplace stiles are elsewhere. They are not completely unknown in other counties—one is to be found in an estate not far from Swansea, on the borders of Gower, one of the regions which merits the title of "a little England beyond Wales."

Wayfarers through ornamental parklands may have been similarly puzzled to see at their entrances, let into the surface of their carriage drives, grilles formed of iron rods a half-inch or thereabouts in diameter and about the same distance apart, and looking at first sight like some fantastic sort of weighbridge. Though these flimsier grilles are so different in appearance from the gapped slabs of the West Country, they are constructed on the same principle. They form an impassable barrier to the deer, whose slim delicate hooves slip alarmingly over the rods of metal, whereas they form no barrier at all to



SQUEEZER STILE

This type of "V" shaped stile, also known as a squeezer, is designed to allow passage of human legs but bars the body of a sheep.

Above is a Hertfordshire example.

a man, to the broader hooves of a horse, or to the wheels of a carriage. Such grilles may be encountered in Windsor Great Park, in a park just outside Welshpool in the Welsh Marches, and elsewhere.

Another simple means of crossing a barrier is to climb over it. This is hardly applicable to hedges, and is inconvenient as regards wire fences, especially those of barbed wire, but it is perfectly practicable, even without additional assistance, for wood fences (other than those of the palisade type) or for low stone walls. Sometimes a footpath may lead right up to a fence unbroken by gap or other type of stile, bu, at the point where it crosses, the bars of the fence are unusually thick and rigid, and it is plain to see the marks on them where many a foot has trod.

Straddling over such a fence, however, is a slow and ungainly process. It is most often expedited by steps of one sort or another, which a man of ordinary agility can almost take in his stride. Indeed, a fence with a crossbar or two

projecting on each side of it is what comes most readily to our minds when we have occasion to think of the word "stile."

There is scope for variation even in so ordinary an object as this. The fence itself may consist of wires, barbed or otherwise, the barbs perhaps being replaced by plain wire where the path crosses it, out of respect for the clothes of passers-by, of stout horizontal bars of wood, or of slighter vertical wooden bars arranged to form a palisade. The steps may be one in number, perpendicular to the fence; or there may be two of them, seldom more, at right angles to each other but oblique to the fence, supported on stout squared posts driven into the ground or perched more precariously on thinner rounded stakes. The lower crossbar may be extended to form a tiny bridge across a ditch or narrow hedge-side stream. Instead of a crossbar there may simply be two vertical posts on which to rest the foot while striding from side to side. The same effect is produced if an untended



ZIG ZAG GAP

A common construction in which it is necessary first to step one way and next in the opposite direction on the farther side of the central barrier.



CORNISH SLABS

An arrangement of stone slabs set parallel and projecting above the ground level. This device serves its purpose owing to the fact that the spaces between the stones make it difficult for sheep to cross them.

crossbar has rotted away: a rotten stile, indeed, can be very dangerous, especially if barbed wire enters in any way into its construction. The stile may lead not into the next field but into a tiny three-sided enclosure, with a second lower rail that also has to be straddled in its turn.

A crossbar to a stile is a primitive step, the sort of thing which multiplied makes a ladder or a stair. Both ladders and stairs, indeed, enter into the composition of stiles, and are more frequent in some regions than the crossbar itself. Parklands, surrounded as they are by high walls and fences to give the privacy which their owners desire, often demand a high ladder to cross them. Iron ladders eight feet high or more, sloping slightly out of the upright, and with a dozen or so rungs, are to be found in Kent.

Elsewhere the ladders are made of wood, with flat steps instead of rounded rungs. They may range, according to the size of the barrier they have to pass, from a few feet upwards to the height of a tall man's head. Arranged in pairs and like the stone ladders leaning a little out of the vertical, they enable a wall to be crossed with reasonable ease. Sometimes from the top of the ladder a vertical post may rise, neatly smoothed and rounded at the top to form a convenient hand grip. These little wooden flights of steps, with or without the hand grip, may be found in places so far apart as Cambridge, Yorkshire, and North Wales,

Stone Steps

Stairs like those in houses are very seldom made of wood when they are to be used in the fields. In districts where hard rock is found they are often built of the stone of the district worked into shape. Sometimes a stone stairway of two or three steps leads up a wall or earth barrier and down the other side; and sometimes at their summit a slab of thin stone, low enough to be stepped over comfortably, stands on its edge.



A RUSTIC NOTE

A two-step stile with double rails above in
a Buckinghamshire hedgerow.

Sometimes, the stones are more roughly worked and have an air of being casually piled together, so as to make their surmounting a proceeding demanding care.

Some of these stone stairways are very old. Any stile may be anciently sited, for many of our tootpaths follow a traditional course, but the material, the wood or iron of which they are made, wears out and has to be replaced. Even the hard granite of Dartmoor may be worn with deep depressions where the feet of countless generations of waytarers have trod. Yet the stone steps are next door to permanent. The generations have marked them, but very many generations will be needed before they wear completely away.

God of Boundaries

On one West Country stile the evidence of a remote antiquity appears beyond doubt. A very ancient tradition regards a boundary as something sacred; the Romans had a special god of boundaries whose name was Terminus. The custom of marking a boundary with a religious

emblem lived on into Christian times, though it has fallen into desuetude now. In Cornwall there is a stone stile with another standing stone at its side that serves as a convenient handhold to those who use it, and this stone pillar is boldly carved with the Sign of the Cross.

The stone slabs of Devon and Cornwall are normally on the ground level and cross a straight gap, but they may exceptionally be found in other arrangements than this. They may rise to form a series of massive stairs, the steps neither touching one another nor resting on the earth, but being supported by their ends on the stones of a wall or the earth of a hedge-crowned bank. They may twist with a gentle zig zag course through a thick earth bank, so that it is impossible to see one end from the other, like the beginning of a picturesque maze.

There is another way of arranging stone steps that has only a very distant resemblance to a civilized flight of stairs. In regions where the local rock breaks up readily into flat slabs, these may be stuck into a wall with only a few inches



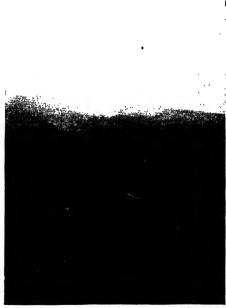
STEPS IN THE WALL

A wooden ladder stile at Disley, Cheshire.

protruding. Arranged not vertically one above the other but on a slant, and a foot or more apart, they can be climbed fairly easily so long as the climber takes due care. These are found in many mountainous regions, and also in districts lower in character where suitable stone occurs, such as the bleak bare lowlands of North Pembrokeshire.

Cheshire Stiles

These projecting footholds may be small in size and roughly shaped. They may, on the other hand, be larger and carefully squared, but in this case they are less likely to be local either in material or tradition, and more likely to be brought from elsewhere. Carefully squared slabs form a stile in Cheshire, but perhaps the most elaborate construction of this nature occurs in Dorset. It is hardly a stile, however, it is the flight of projecting stones by means of which one is able to climb on to the



ON THE MOORS TARGED E. WILD

Stone steps in a moorland wall on the

Derbyshire moors.



AN ESSEX STRUCTURE

A well-built ladder stile at Abridge, Essex.

"cob," the breakwater and tiny pier, of Lyme Regis.

Some of these devices are almost as complicated as gates. Gates are, moreover, more convenient for certain purposes than the most well-made stiles. They can be constructed of any width, and they do not need to be climbed over, so that they will pass not merely men and animals but carts and carriages and ploughs. A footpath may have only stiles or tiny swing gates, but a bridlepath, where horses may be ridden but carts cannot go, will have its own larger bridle-gates. And a carriageway needs a gate wide enough to take a farmcart.

There is little to discuss regarding different types of gates. A gate is a gate and that is that. They may vary in the arrangement of their crossbars and in the strength of their build; they may be easy to climb, or unpleasantly testooned by barbed wire or crowned by a row of forbidding spikes. Experienced way-farers will not need reminding that in the country gates should be left as they are found, open or shut, for a gate left open may cause valuable cattle to stray.



SIGN OF THE CROSS. This stone pillar beside a roughly built Cornish stile was evidently originally intended for other purposes.

Nor is it necessary to tell them that in climbing a gate they should do so at the hinge end.

Though gates may vary little, the methods by which they are fastened are often as ingenious as the stiles themselves. Here a gate will have no fastening at all, but merely jam itself shut against the opposite gate-post or on a gentle slope of the soil. There it will be held shut by a loop of wire, its ends twisted together, which is loosely cast over a projecting upright or hooked on to one of its bars. Elsewhere it will have an iron fastening professionally made.

Self-closing Gates

A busy countryman does not want to have to stop to turn a key or shoot a bolt, and for this reason farm gates are very seldom fitted with padlocks or bolts—not that these are altogether unknown. He prefers something that will click into

position when the gate swings shut, usually by some ingenious adaptation or other of the inclined plane. A flattened iron rod on the end of a gate, engaging into a horizontal slot, is very common; it is usually kept fast into the slot by its own springiness or its weight, and discupaged by a pull on a hand-hold or knob. A latch that slides up a slope and falls into a vertical slot is also frequent; it may be a hefty bar of wood or a smaller iron strip, its slot on the gate-post either being of wood or of metal to correspond.

More uncommon are slots on the ground to engage the end of the gate—and at the entrances to park drives these may be ingenious systems of levers by which the latch is released and the gate opened by the weight of an approaching vehicle. Sometimes a latch may be fixed immovably to the gate, which has to be bodily lifted in order to disengage it. Smallest and least obtrusive is an iron bolt which lifts a tiny latch on the gatepost, a latch that falls behind it to hold it fast.

The small gates on footpaths which merely admit pedestrians, or possibly a bicycle or a pram, bring us back to our stiles, of which they are distant relations. Here the most popular type of all is a small metal gate (less often wood), which needs no latch at all, because it swings freely from side to side of a semicircular fence opposite. To use it the wayfarer has to push the gate away, stand on the far side of the enclosure and let it swing past and behind him—a difficult proceeding to the cyclist or to the wearer of a bulging tent-filled pack. Such contrivances are known as "kissing gates" because of a happy tradition that a mar and a maid, standing one each side of the swinging barrier, can behave as though they were standing under the mistletoe. It is as good an excuse for such tender passages as any, if excuse be needed in these forthright times.

But kissing gates, and small gates buil on the same plan as larger ones, by no means exhaust the possibilities of movable stiles. The simplest gate is a removable bar to a fence, a bar that can be slid o lifted out of its socket so that the wayfarer can crawl under, or stride over, the bar above or below, and so that the whole range of two or three bars which form the fence can be removed when a horse or a vehicle has to pass. Such arrangements, are, however, open to the objection that they have to be replaced, and so are a hindrance to a hurried farm-worker. The methods used to overcome this difficulty are ingenious indeed.

Ingenious Fastenings

In Sussex is found a section of fence in which the top bar is pivoted on one post and slides into a slot on the other. A counterweight swings it upwards when its retaining catch is unfastened, and afterwards it has to be pulled down and secured by hand. In Kent and also in Oxfordshire the stiles work in exactly the reverse fashion: a series of weights on the pivoted arms hold them up horizontally to form a fence. The passer-by can hold them down while he steps over

them-he can even carry a bicycle over them but it is clumsv work- and when he releases them they swing back into position again. Most ingenious, perhaps, of all these contrivances is a "pincer" stile to be found in Oxtordshire: two sloping posts lean outwards like a "V" stile of unusual width. but within them are two vertical arms with tops curving inwards and pivoted at the ground. These normally meet and bar the way, but travellers can pull them apart to make a gap. They are guided in their pincer-like swing by stout iron rods passing through holes in the fixed sloping posts.

To most of us a turnstile is an iron contrivance fixed at the entrance to a seaside pier or place of entertainment, and turning to admit one customer when a penny

is dropped into the adjacent slot, or a uniformed official presses his foot on a lever. It suggests not so much the country and its calm stillness as the clamour and artificiality of some noisy fun fair. Yet turnstiles of the same general type but far simpler in construction have their agricultural use. They serve as entrances to cattle-markets when the beasts are safely in their pens and the gates that admitted them are shut. They are to be seen, though very infrequently, on some of our footpaths in the heart of the country itself. Cambridge and Glamorgan are among the counties in which they occur.

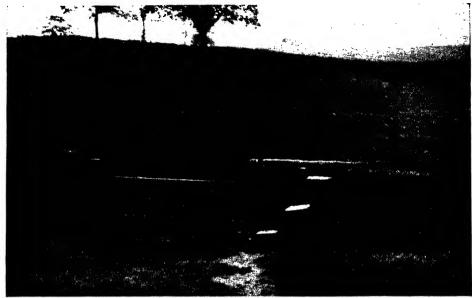
At one time turnstiles were far more common objects of the countryside than they are today. In his *Everyday Book*, written a century or so ago, William Hone sings their praises, laments their disappearance, and recalls happy memories of the time when they were more widely known:

"Those good old turnstiles, can I



IN A SURREY VILLAGE

This picturesque lych gate, with the grey old church in the background, is to be seen in the attractive village of Shere, in the Tillingbourne valley.



A DERBYSHIRE STILE

HAROLD F. WILD

In the north of England, where stone is plentiful, and walls take the place of hedgerows, stiles are often made in this fashion by placing flat stones to project on both sides and provide steps. Above is an example at Hayfield.

ever forget them? The hours I have spun round upon them when a boy; or those in which I have almost laughed myself to death at the remembrance of my village pedagogue's disaster! Methinks I see him now. The time a sultry day; my dominic a goodly person of some eighteen or twenty stone; the scene a footpath sentinelled with turnstiles, one of which held him fast as in utter amazement at his bulk. Never shall I forget his efforts and agonies to extricate himself, nor his lion-like roars which brought some labourers to his assistance, who when they had recovered from their convulsions of laughter, knocked off the top to let him go. It is long since I saw a turnstile, and I suspect the Falstaffs have cried them down. But without a jest, stiles and footpaths are vanishing everywhere."

Gaps to walk through, steps to climb, and little gates of one type or another to swing open by no means exhaust the possibilities of British stiles. There are composite forms using more than one

of these methods. A "V" shaped gap running not down to the ground but to a step raised on uprights some distance above it is found in Cheshire and in Wilts. In Sussex a little swinging gate is pivoted above three fence-rails with a crossbar of the ordinary stile type passing through them. In this county also a series of three projecting stones lead up to a gap with vertical sides well above ground level. A flight of three wooden steps reaches a high-level crossbar stile in Hampshire. In Gloucester a little turnstile surmounts a vertical stone slab at the foot of which is a raised stone step. Other forms may even yet come into existence through the ingenuity of our rustic engineers.

Old-fashioned Stiles

Our friend Hone concluded the passage we have quoted by deploring the manner in which old footpaths were being closed and old-fashioned stiles vanishing from the rural scene. Evidently the destruction of England's beauty, of which we hear so much today, is older than the modern industries on which it is often blamed. Today we have many public-spirited organizations to watch over our countryside and resist attempts to infringe on public rights.

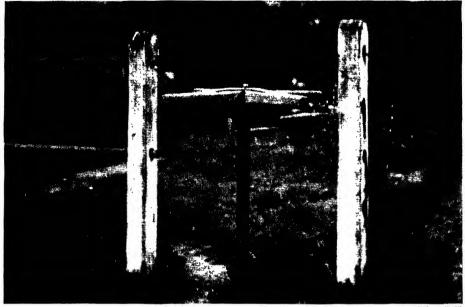
Among the archives of that publicspirited body, the Commons, Open Spaces and Footpaths Preservation Society is a photograph showing a defeated attempt to block up a public right of way. The landowner had run a close-battened wood wall from side to side right across the path. This attack on the people's rights was foiled, however; the wall was sawn through right down to the level of the former fence, and here a stile was erected filling the narrow gap.

Apart from their construction, and from the laws which regulate them, our stiles have a romance and a poetry of their own. They are good places at which to pause, to rest, to lean on their topmost bar and admire the view. Boundaries often form the junction of two different types of country. Behind us there may be the cornfields or the pastures, but before us there may be a runway through a wood, its edges gay with the spring flowers or dappled with



A CURIOUS CAMBRIDGE STILE

This unusual stile, to be seen at Linton, near Cambridge, is a trap for the unwary. When at rest it has the appearance of an unbroken fence, but the seemingly solid post on the left is in three pieces. The photograph depicts what happens when any one steps on the crossbars.



A TURNSTILE

A. L. SIMPSON

We are upt to think of a turnstile as a barrier at which we pay for entrance. This stile at Godstone, Surrey, illustrates the original meaning of the word. As will be seen, it is a simple arrangement of two crossburs pivoted on an upright post.

the sunshine breaking through the leaves; there may be a stretch of common land, gay with the purple of the heather or the gold of the gorse; there may be a valley edge from which we can see the gleam of a river or the loom of the distant hills; there may be a cliff with a breakneck path leading down to the edge of the foam. An excellent point of vantage is the field gate or the weather-beaten stile.

Rural Courtship

Hone, a hundred years ago, saw great possibilities in the stiles:

"Again I say, I love footpaths and stiles of all species—aye, even the most inaccessible piece of rustic erection ever set up in defiance of age, laziness and obesity. How many scenes of frolic and merry confusion have I seen at a clumsy stile! What exclamations and charming blushes, and fine eventual vaultings on the part of the ladies, and what an opportunity does it afford to

the boys of exhibiting a variety of gallant and delicate attentions! I consider the rude stile as in no way an impediment in the course of a rural courtship!"

Nowadays, perhaps, the exclamations and charming blushes are less in evidence than the fine eventual vaultings when the girls of today have to negotiate such an obstacle, but the magic of the stiles remain. So at least a foreign visitor to our shores believes. In her novel, *The Unknown Island*, "Pierre de Coulevain" describes them for the benefit of her French public.*

"This little arrangement (the stile) is very characteristic of the English, is it not?

"Upon the steps of these stiles country folk meet to take their lovers' vows at ease and do their courting.

"Believe me, if the kisses they have

* The above translation is by Mr. A. L. Simpson of the Commons. Open Spaces and Footpaths Preservation Society, and is quoted by his kind permission from the Society's journal.

daily witnessed were to appear like fairy lamps to light up these stiles there would be at twilight little flames twinkling over all the Unknown Island! What a pretty illumination!"

Stiles and Proverbs

Far back towards the beginnings of our history our stiles were known. The earliest reference to them is in a grant of land by the Saxon King Offa dated A.D. 779. They are part of our tradition; they have given us proverbs that are in everybody's mouth. "All have stumbled at that stile," says a document of 1352; and "To helpe a dogge ouer a style" had the same meaning in 1546 as it has The shrewd wisdom of the countryman is expressed in the saying, "Ye would be ouer the style, ere ve come at it," and Archbishop Parker, in 1574, expressed his meaning clear when he said, "What is meant but to go over the style where it is lowest?" There are other proverbs of the same rural origin: "He that will not go over the stile must be thrust through the gate"; "The

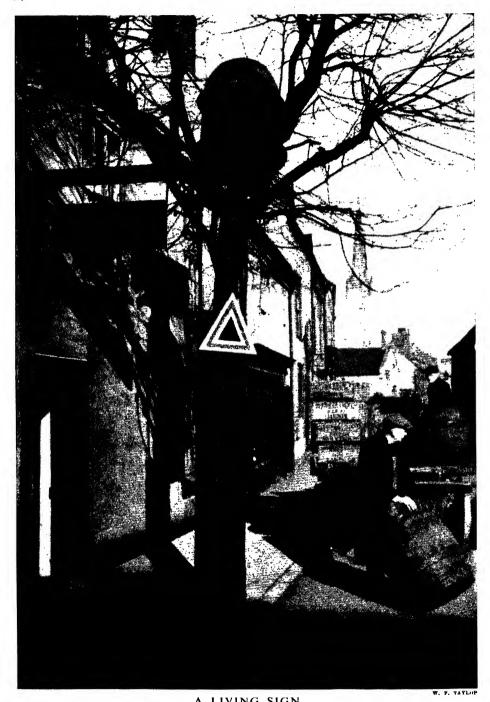
best dog leaps the stile first"; "To leap over the hedge before you come at the stile." Others are more local: "Like a Suffolk (or Essex) stile, troublesome to be clambered over," and "Essex stiles, Kentish miles, Norfolk wiles, many a man beguiles."

The broad roads and the railways cross our countryside, the aeroplane swoops through the clouds above. But still the footpath links the fields, cleaves the woods, crosses the common, and climbs the hill. So long as we turn to the country as the source of our food, so long as our farmers use the British system of small enclosed fields-and the rural mind holds fast by the regional tradition-so long shall we need our footpaths and our stiles where field meets field. When universal peace has been for ever gained, when our rocket ships take our pioneers to colonies on other worlds, still the people of Britain will enjoy the peace and beauty of our paths that lead to secluded places; still they will " Jog on, jog on the footpath way, and merrily hent the stile-a."



JOHN H. STONE

ANOTHER USE FOR A STILE Young wayfarers find a stile may serve as a seut as well as a barrier.



A LIVING SIGN
The "Beehive" at Grantham displays this unusual sign of a hive of bees.

INN NAMES AND SIGNS

by TOM STEPHENSON

E are all familiar with the great variety and strange conceptions displayed by inn signs, and we have not far to travel before we notice the "Red Cow" or the "Black Bull," the "Bay Horse" or the "White Lion," the "Saracen's Head," the "Fox and Grapes," and hosts of other curious names.

In the year 1710 The Spectator commented, "Our streets are filled with blue boars, black swans, and red lions, not to mention flying pigs and hogs in armour, with many other creatures more extraordinary than any in the deserts of Africa."

Curious Combinations

"My first task," the writer continues, "therefore, should be, like that of Hercules, to clear the city from monsters. In the second place, I would forbid that creatures of jarring and incongruous natures should be joined together in the same sign, such as the 'Bell and the Neat's Tongue,' and the 'Dog and Gridiron.' The fox and goose may be supposed to have met, but what have the fox and seven stars to do together? And when did the lamb and dolphin ever meet except upon a signpost?"

Similar sentiments are expressed in the following lines, also written about the same time:—

"I'm amazed at the signs,
As I pass through the town,
To see the odd mixture:
A Magpie and Crown,
The Whale and the Crow,
The Razor and Hen,
The Leg and Seven Stars,
The Axe and the Bottle,
The Tun and the Lute,
The Eagle and Child,
The Shovel and Boot."

It is probable that not all the signs

mentioned in these quotations were inn signs, for in those days it was the custom for most tradesmen to display signboards outside their premises. The purpose of these is indicated in a charter granted by Charles I on his accession to the throne. This gave the right to the citizens of London to "expose and hang in and over the streets . . . signs and posts of signs affixed to their houses and shops, for the better finding out such citizens' dwellings, shops, arts or occupations. . . ."

When the majority of people could not read, it was of little use painting "The Gables" or "Laurel Villa" over your front door, but the man who could not decipher "The Swan" or "The Boar's Ilead" could recognize pictorial representations of such things. In the days when, even in London, the houses were not numbered, the signboards were useful indicators, and the poet Gay remarked:—

"Be sure observe the Signs, for Signs remain

Like faithful Landmarks to the walking Train."

Not until the beginning of the eightcenth century was there any attempt at street numbering, and announcements like the following were prominent: "At her house, the 'Red Ball and Acorn,' over against the 'Globe Tavern,' in Queen Street, Cheapside, near the 'Three Crowns.'..."

La Belle Sauvage

By such usage inn signs often came to designate the whole street or locality. La Belle Sauvage, in London, is a famous instance about which there has been much controversy. Until 1873 there stood on Ludgate Hill an inn known as the "Bell Savage." Addison, in *The Spectator*, suggested this was a corruption

THE "WHITE BULL"

A lifeless looking animal at Ribchester, Lancashire. Note the mounting block at the entrance. The pillars are believed to be of Roman origin.

from the French La belle sawage. According to another version, it was once the property of Lady Arabella Savage who was known as "Bell Savage." a name which was symbolized by a representation of a savage and a bell—a device, by the way, which was depicted on the stage coaches which had their starting place at the inn. Larwood and Hotten, however, who produced a voluminous history of signboards in 1866, give another explanation. They translate a document of the days of Henry VI which refers to "Savage's Inn, otherwise called the Bell on the Hoop,' in the parish of St. Bride, in Fleet Street, London."

To trace the origins of inn signs we should have to go back to the days of ancient Rome, and possibly beyond them. In the ruins of Pompeii, which was overwhelmed by an eruption of Vesuvius in A.D. 79, a number of signs worked in stone or terra-cotta have been unearthed. One of these represented two slaves carrying an amphora or wine jar, a design which was possibly the prototype

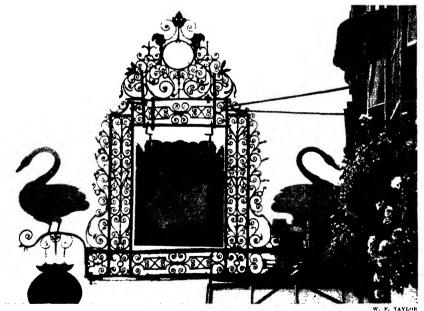
of the "Two Brewers" still prevalent.

The Roman wine-seller indicated his trade by displaying an evergreen bush, and it was possibly in the days when Britain was under Roman rule that the practice was adopted in this country. "Good wine needs no bush" is an old proverb, doubtlessly owing its origin to this custom.

Early Bush Signs

From very early times innkeepers were compelled to display a sign which, in its simplest form, consisted of a pole set up in front of the house, or projecting from the wall. If wine were available, then a bush was attached to the end of a pole. Florence North, a brewer of Chelsea, was brought to book in 1393 for not displaying a sign, and in the reign of Henry VI it was enacted that "whosoever shall brew ale in the town of Cambridge, with intention of selling it, must hang out a sign, otherwise he shall forfeit his ale."

When the publican had the misfortune



"THREE SWANS"

The swan occurs frequently as an inn name. Two, three and four swans are also to be found. The graceful sign in the above photograph is to be seen at Market Harborough.



THE "BELL" AT THETFORD

This was once a most common sign and is of great antiquity. It is known to have existed in the fourteenth century, and Chaucer said of the Tubard that it was "faste by the Belle."

to lose his licence his sign was removed. Thus Massinger in A New Way to Pay Old Debts :-

"For this gross fault I here do damn

thy licence,

Forbidding thee ever to tap or draw; For instantly I will in mine own

Command the constables to pull down thy sign."

of the nobility were a ready source of inspiration, and so began to appear the "Red Lions," "Griffins," and other heraldic beasts. As time went on the signmakers "ransacked earth, air and seas, called down sun, moon and stars to their assistance, and exhibited all the monsters that ever teemed from fantastic imagination."

Today there is such a bewildering



"Best Ale Under the Sun" is the inscription beneath the sign of this hostelry in the quaint little village of Dent, Yorkshire,

A Yorkshire record tells that Michael Jackson's wife, of Cockeswold, was prosecuted in 1613 "for coming forth of her house with a pitchforke and beating awaie a man that was cutting down her Ale-rodd, he being soe commaunded to doe by Sir H. Belassis, Knt., Barronett."

Competition may have led to the elaboration of inn signs and adoption of devices having special appeal for certain types of customers such as the warrior, the pilgrim or the chapman. The arms assortment as almost to defy any attempt at classification or orderly treatment. For a start we may consider a few signs derived from armorial bearings. First, we may mention the dragons of various hues.

This mythical beast was the standard of the West Saxons. Edward III, also had a standard at the battle of Crecy, which displayed "a dragon of red silk adorned and beaten with very broad and fair lilies of gold." Probably more



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THE "TWO BREWERS"

Another old name which also sometimes appeared as "Two Jolly Brewers." The above sign is a modern conception painted by Mr. Eric Newton.

common than the "Green Dragon" and the "Red Dragon" is the "George and Dragon," with varied interpretations of the patron saint administering the death blow to the fearsome beast. The griffin is another mythical animal which the signmaker copied from armorial bearings, and many representations may be seen of the dreadful beast which was larger and stronger than eight lions.

The bear and ragged staff was taken from the crest of the Earls of Warwick. According to legend, one ancestor of the family was known as "The Bear" for having strangled such an animal with his hands, while another ancestor used a young tree as a club with which to slay a giant.

A badge of Richard III was a white boar, and this was a popular sign in his day, while the blue boar was the heraldic device of the Farl of Oxford, one of the king's opponents. Fame and popularity are notoriously short-lived and it is said that soon after Richard's death, on Bosworth Field, tavern keepers were busy painting their white boars into blue boars. Even the "White Boar" at Leicester, in which Richard spent his last night before the battle, was among those to change their colour.

The red lion is said to be derived from the badge of John of Gaunt, "time honoured Lancaster," while the black lion possibly originated from the coat of arms of Queen Philippa, wife of Edward III, and the blue lion is ascribed to Anne of Denmark, whom James I married.

Of gentler beasts with similar origin may be mentioned the antelope and the white hart. The latter, a badge of Richard II, was formerly a favourite subject for tayern signs.

The legend of the white hart had its beginnings in Greek mythology, and Aristotle tells that Diomedes consecrated a white hart to Diana which lived for a thousand years, before being killed by a king of Sicily. Medieval writers retold the story in different versions and with different settings. Alexander the Great, Julius Cæsar and Charlemagne are variously credited with capturing a white hart bearing a collar of gold.

It was a sign of the white hart which



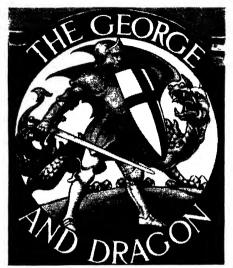
TRUST HOUSES LID

THE "GREEN DRAGON," BARNET A spirited representation of a fabulous monster by Mr. H. N. Easthaugh.



A LINK WITH QUEEN BESS

There are numerous inns claiming to have been patronized by Queen Elizabeth. Above is the Elizabeth of England Inn at Elmley Castle, Worcestershire.



"GEORGE AND DRAGON," CODICOTE

A modern sign depicting the well-known patron saint of "Merric England."



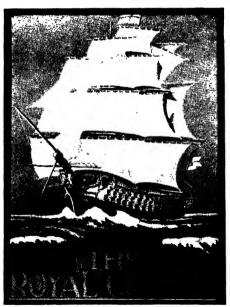
THE "FLYING HORSE,"
NOTTINGHAM

In this sign, executed in low relief in wood, the name refers to the mythical Pegasus.



THE "SARACEN'S HEAD,"
DUNMOW

Here a conquering crusader is represented bearing aloft the head of his enemy.



THE "ROYAL GEORGE,"
TINTERN

A modern sign, commemorating the ill-fated ship which sank off Spithead in 1729.

ABOVE SIGNS BY MR. II. N. KASTHAUGH WITH PERMISSION OF TRUST HOUSES LTD.

was described as "the noblest sighneposte in England." This masterpiece was erected in 1665 and spanned the road in front of the Elizabethan inn at Scole, Norfolk.

The white hart, surrounded by a wreath, hung as a pendant from the centre of the bridge-like structure, the whole of which was elaborately carved with lions, angels, and scenes and figures from mythology. This supersign cost the enormous sum of £1,057.

Mythical Pegasus

The flying horse, represented on many signs, has been assumed to depict the mythical Pegasus which figured in the armorial bearings of the Knights Templars. Another interpretation connects it with a form of swing once popular at fairs and other gatherings. The seat of the swing was in the shape of a wooden horse and the rider, as he

swung through the air, had to take a ring off a quintain with his sword. Some Flying Horse inns had a sign depicting this pastime.

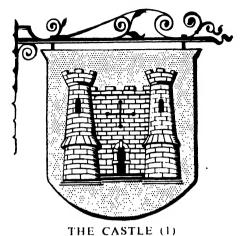
The eastle was adopted very early for the name of an inn as a sign of "good entertainment for man and beast," and in later days the name of a neighbouring castle was often adopted in full. In the Middle Ages travellers of all kinds sought hospitality at the nobleman's castle. Readers of *Iranhoe* will remember how there arrived one evening at the hall of the Saxon Cedric of Rotherwood. the Knight Templar de Bois-Guilbert, and his companion Prior Aymer of Jorvaulx, Ivanhoe himself, disguised as a palmer or pilgrim, and the lew, Isaac of York. All these were, as a matter of course, given food and lodging for the night.

Many inns have adopted the arms of some local family and display the



THE "KING'S HEAD," SHREWSBURY

An old half-timbered inn at Shrewsbury. There are many inns with the name, and it appears to have been popular as far back as the sixteenth century, for it was the head of Henry VIII that was most often depicted on signs so designated.

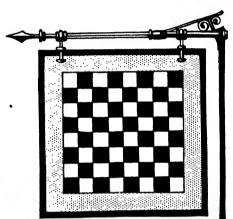




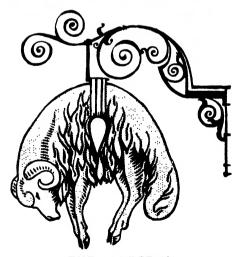
THE WHITE HART (4)



THE CATHERINE WHEEL (2)



THE CHEQUERS (5)



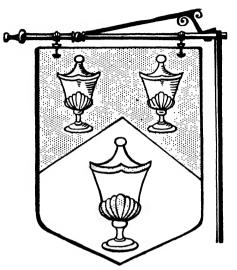
THE FLEECE (3)

(1) At an early date the castle was adopted as an indication of "good entertainment for man and beast." (2) The Catherine wheel was probably adopted from the badge of the Order of the Knights of St. Catherine, founded in 1063. (3) The fleece was a sign which no doubt had special appeal for woolmerchants and their carriers. (4) The white hart was the favourite badge of Richard II and was worn by his household and also carved on his monument. (5) Among the ruins of Pompeii is thought to take its name from the exchequer of medieval moneychangers, which was ruled in squares.

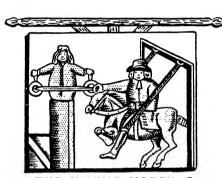
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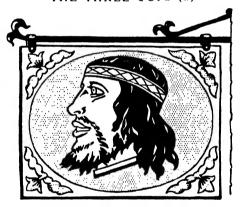
THE BLUE BOAR (6)



THE THREE CUPS (8)



THE FLYING HORSE (7)

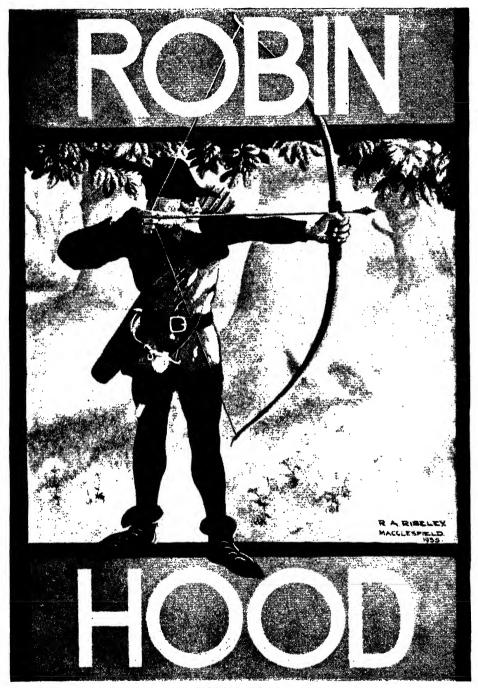


THE SARACEN'S HEAD (9)

(6) The once powerful De Veres, Earls of Oxford, had the blue boar as their crest. (7) Pegasus, which figured in the armorial bearings of the Knights Templars, is usually considered the origin of the flying horse; this sign, at Nottingham, suggests another explanation. (8) The three cups is a design taken from the arms of the Salters' Company; in the seventeenth century there was a famous inn of this name in Aldersgate, London. (9) The Saracen's head is an inn Sign which was popular at the time of the Crusaders. (10) Two brewers' men carrying a barrel of beer slung from a pole is probably an old sign of the trade.



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ROBIN HOOD

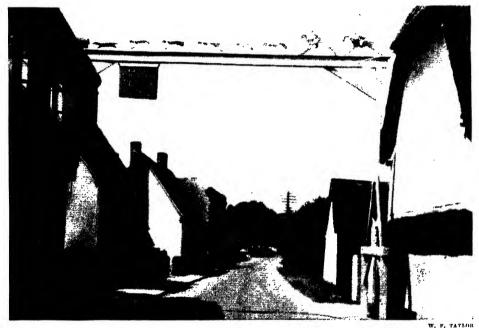
The legendary outlaw of Sherwood Forest was by repute an archer of unerring aim.

appropriate signs of the "Devonshire Arms," the "Wake Arms," and the "de Tabley Arms" and a host of others.

Elsewhere will be found "King's Arms," and "Queen's Arms," no particular monarch being specified. So also we find the "Crown," which is equally indeterminate, but in the "Rose and Crown," the rose is said to be the Tudor rose of the House of Lancaster. Lastly of heraldic signs, we may mention

them, they pictured them with huge, big tertible faces (as you still see the sign of the Saracen's head is) when, in truth, they were like other men. But this they did to save their own credit."—Selden's *Table Talk*, quoted by Larwood and Hotten.

Some signs date themselves, or rather the period of their origin. Thus the "King Alfred," the "Black Prince," "William the Fourth," or the Victoria



IN A HERTFORDSHIRE VILLAGE

At Barley, near Royston, a little inn has its sign bridging the road and representing the fox and hounds in full cry.

the "Cross Keys" which might be assumed to be the symbol of a locksmith, but which actually depicts the arms of the Papal See and the emblem of St. Peter.

Of signs with historical allusions may be mentioned the "Trip to Jerusalem" at Nottingham, and the "Saracen's Head" which occurs in many places. Both names are taken to date from the days of the Crusaders. "When our countrymen came home from fighting with the Saracens and were beaten by Hotel, make their history very clear. The "Duke of Wellington" or the "Duke of York," the "Lord Nelson," the "Lord Palmerston" and many others record once popular heroes. Many such signs change with the times, and the hero of today may take the place of the hero of yesterday. The poet Goldsmith told of "an alehouse keeper near Isling ton, who had long lived at the sign of the 'French King,' upon the commencement of the last war, pulled down his old sign, and put up that of the 'Queer



"FOX AND HOUNDS," BREDON

This picturesque brick-and-timber and thatched inn at Bredon, Worcestershire, depicts the hounds springing on a fox at bay.

of Hungary.' Under the influence of her red nose and golden sceptre, he continued to sell ale, till she was no longer the favourite of his customers; he changed her therefore, some time ago, for the 'King of Prussia,' who may probably be changed in turn for the next great man that shall be set up for vulgar admiration."

The "King's Head" is a convenient sign adaptable to any reign, but many of these are said to have originally depicted Henry VIII. At Hever, near Edenbridge, in Kent, there is an inn now known as the "Henry VIII" though its predecessors were named otherwise. At Hever lived Anne Boleyn or Bullen, as the family was locally known. Local legend has it that Henry used to come courting his future bride According to Larwood and Hotten, after Anne had been beheaded, the village alehouse had for its sign

"Bullen Butchered" and was so known for many years. With a change of proprietor the name was altered to "Bull and Butcher." Later, at the request of the local clergyman, the name was changed to the "King's Head." When the village painter was commissioned to make the alteration he drew the usual picture of Henry VIII, but placed in his hands a large axe.

The many "Royal Oaks" found up and down the country refer to the tree at Boscobel, in which Charles II hid when fleeing after the Battle of Worcester. Some of the old signs showed the head of the Merry Monarch amid the foliage of the oak.

Robin Hood

Robin Hood is possibly as mythical as Neptune or Woden, but his name persists in many landmarks, and also in a number of inn signs. Usually these bear an



A HOMELY INN

The "White Horse" at Wroxton, Oxfordshire, hangs its sign from a sycamore tree.

C.C.—M*

invitation to step inside and take a drink with the bold outlaw. Castleton in Yorkshire has a typical sign with the following inscription:—

"Kind gentlemen and Yeomen good, Step in and sup with Robin Hood. If Robin Hood is not at home, Come in and drink with Little John."

Many existing names are curious corruptions of the originals, and have led to much speculation as to their origins. The "Bull and Mouth" was originally "Boulogne Mouth," a popular sign after the capture of Boulogne by Henry VIII.

The "Devil and Bag of Nails" has

been explained as derived from the Satyr and Bacchanals. The "Goat and Compasses" has been interpreted as "God Encompasseth Us," but others consider the goat may have been the original sign to which has been added the masonic emblem of a pair of compasses.

Another doubtfully interpreted name is the "Cat and Fiddle," sometimes given as referring to one Caton fidele, or faithful, a staunch Protestant in the reign of the Catholic Mary. But there is a record of a Cat and Fiddle Tavern in 1589, only a year after the death of Mary, and it is not likely the deterioration in the name would have proceeded so



A NEW FOREST SIGN

John Barleycorn was the hero of the allegorical ballad of brewing, and Burns wrote:—
"Inspiring bold John Barleycorn,
What dangers thou caust make us scorn!"



A MODERN HUNTING SIGN The "Tally Ho" at Eastbourne designed by the Birmingham Guild Ltd.

rapidly. Possibly the name is as old as the nursery rhyme of :--

Hey diddle diddle, The cat and the fiddle.

There are, as one would expect, numerous signs inspired by workaday features and happenings, some rustic, some urban, some alluding to sport and pastimes. In many places will be found such names as "The Barley Mow," "Plough," "Wagon and Horses," "Jolly Farmer," "Horse and Groom," "Postboy," "Bricklayers Arms," "Bat and Ball," "Huntsman," "Hare and Hounds."

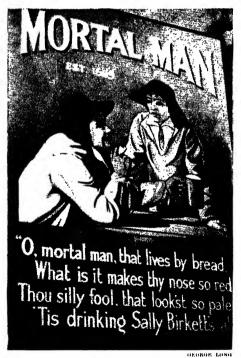
Of sporting origin, though not obviously so, is the "Hark to Bounty" in the Yorkshire village of Slaidburn. One day, it is said, a hunting squire heard the hounds barking in the distance, and recognizing the voice of his favourite dog remarked "Hark (or listen) to Bounty."

Fanciful signs which perhaps merely commemorate whims of forgotten wags, are "Pig in Armour," "Goat in Boots,"

"Dog in Doublet," "Cow and Snuffers" and "World Upside Down." At Troutbeck, near Windermere, there is an inn known as "The Mortal Man" which formerly had a sign painted by the artist, Julius Cæsar Ibbetson. The original sign has gone, but the following rhyme has been retained:—

"O, mortal man, that lives by bread, What is it makes thy nose so red? Thou silly fool, that look'st so pale, 'Tis drinking Sally Birkett's ale."

Troutbeck reminds one of the artist Hogarth whose parents came from that dale. It was Hogarth who painted the famous sign the "Load of Mischief." This depicted a man carrying a monkey, a magpie and a drunken woman bearing a glass of gin in her hand. Round the man's neck was a padlocked chain, the lock inscribed "Wedlock." Underneath



A LAKELAND SIGN

At Troutbeck, near Windermere, may be seen this amusing sign which has taken the place of an earlier one of the same subject by the artist, J. C. Ibbetson.



GEORGE LONG

THE "TRUSTY SERVANT"

In this ludicrous and savagely satirical sign at Minstead, Hampshire, the supposedly reliable servant is shown with a pig's snout, which is fastened with a padlock, an ass's ears and stag's feet.

the sign was the text "A monkey, a magpie and a wife is the true emblem of strife."

There are a number of signs given to satire in varying degrees. Thus the "Honest Lawyer" is represented with his head under his arm. The "Quiet Woman" and the "Silent Woman" are also portrayed in the same way. The "Trusty Servant," to be seen at Minstead, Hampshire, is, however, rather savage in its satire, and the explanatory lines given below are quite obviously the master's sentiments on the subject and not the servant's:—

"A trusty servant's portrait would you see,

This emblematic figure well survey; The porker's snout not nice in diet shows,

The padlock shut, no secret he'll disclose.

Patient the ass his master's rage will bear.

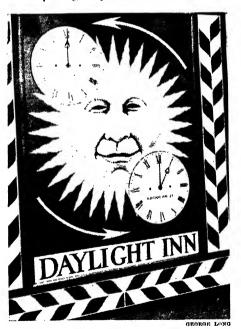
Swiftness in errand the stag's feet declare.

Loaden his left hand apt to labour saith, The vest his neatness: open hand his faith.

Girt with his sword, his shield upon his arm.

Himself and master he'll protect from harm."

There are of course, innumerable other signs besides those mentioned, but these must be left for the reader to discover for himself. In his travels he will find an infinite variety of devices, some quaint, whimsical or fantastic, some wonderfully imaginative or of weird conception, some with inexplicable association, some indifferently executed, others of artistic merit, but almost all with some measure of interest, and with a tale to be read by the inquiring wayfarer.



MODERN COMMEMORATION

At Petts Wood, near Chislehurst, Kent, may be seen this original sign perpetuating the memory of William Willett, originator of the idea of the Daylight Saving Act.

CAMPING AND CARAVANNING

by V. G. BILLER

THE camper can afford to smile when he hears his friends telling of their difficulties in finding accommodation when on holiday, for it is a problem he never encounters. Always he can find some pleasant

place in which he can erect his portable dwelling, it may be for a night, or for a week or even longer.

Camping at once comes to mind as an excellent outlet for those wanting something different from the conventional type of holiday. A camping holiday is cheap, it is healthy, and it is a real holiday in the sense that it affords a greater contrast to our daily lives than does an ordinary boardinghouse holiday. There is also the added attraction of more holidays, for

camping is so inexpensive that week-end trips can become a habit instead of an expensive luxury once or twice a year.

Apart from the cost, camping is a recreation to be enjoyed. What is more delightful than to spend the whole day in the country away from men and towns? Imagine the delight of waking in the morning with the sun streaming through the tent door; then a quick walk across the dew-laden grass followed by a choice meal which, in the crisp morning air, is much more tempting than in town.

The day may be spent in playing games about the camp, or in bathing

or boating in a near-by stream or lake, or perhaps in a walk to a neighbouring beauty spot or historic relic, or in roaming the countryside. Evening brings with it equal thrills. From the tent door the camper can watch night creeping

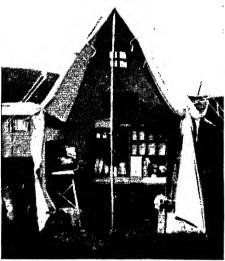
slowly across the fields before he takes a brisk walk as a preliminary to turning in for the night. Then comfortably ensconced in his cosy bed he can look through the tent door to the starlit night, and listen to the mysterious sounds of night life in the hedgerow or from a near-by wood.

Weather does not worry the camper. He knows that his efficient tent and equipment will defy any climate which Britain can produce, and if it does rain he comforts himself with the fact that

it does not rain for ever. Besides, he thinks, is there not some consolation in listening to the beating of the rain on the tent walls and in the sweet smell of the grass after rain has fallen?

Costs? Food about 2s. 6d. a day and camp site fees 9d. or 1s. a day. That's all. Initial outlay on kit is very low. No wonder camping is booming!

Freedom is the essence of camping, for it enables the camper to do away with those conventionalities which characterize modern civilization. Not that the camper is uncivilized. On the contrary camping helps him to become



CAMP KITCHEN

For a lengthy stay in one place, some caravanners erect a tent such as the one seen above to serve as kitchen. In it are kept the provisions, oil stove and utensils.



A camp site at the foot of the Pennines, in Westmorland. The tents have been pitched so as to be sheltered from wind, but not so near as to receive rain drippings from the overhanging trees in wet weather.

a good citizen, and the health-giving powers of recreation in the open air are widely recognized as being of great assistance in the creation of an A1 nation.

Young and old can find interest and enjoyment in camping. The canoeist, motorist, cyclist, rambler and mountaineer, will each find camping a useful adjunct to his pastime.

The spirit of camping has spread abroad and in all the leading countries there have been established camping clubs. These clubs are now united in the International Federation of Camping Clubs which annually holds a camp and congress, which is attended by four or five thousand campers.

Of late years Parliament and local authorities have taken an increasing interest in the rise of camping as a pastime, and national and local legislation has been passed dealing with camping and caravanning. The wandering camper need not however be perturbed by these

laws, for they are aimed chiefly at the type of permanent camp which is conducted without adequate provision for sanitation, water supply, or disposal of rubbish, and which is often overcrowded.

Tents and equipment for campers vary according to individual requirements. The pedestrian must travel light and consider every ounce of kit, but with modern equipment comfort need not be renounced because of weight. cyclist can carry more equipment with less effort, but here again overloading must be guarded against. The motorist is not so much concerned with weight, for he can carry with him such luxuries as collapsible tables, deck-chairs, and folding beds. However, even for the motorist, it is advisable to simplify the There is a temptation to take all kinds of accessories, and to load the car with them indiscriminately. This practice will be found irritating, for the item which is wanted in a hurry is often found beneath a pile of sleeping gear and other paraphernalia which it was thought might be required.

The initial outlay on kit depends on the individual purse, though in practice it pays to purchase the best that can be afforded. Before the War complete equipment suitable for pedestrian camping cost about £3; small tents for walkers cost only 12s. 6d., and a cottage tent for the motorist about 35s. There are numerous reliable firms making tents and camping equipment, and their catalogues should be consulted before making the final choice. The annual exhibition of The Camping Club is an excellent place for comparing different equipment and prices.

Much money can be saved and a good deal of pleasure obtained by making one's own tent in the home, and the long winter evenings could be utilized for this purpose. Full directions for making tents are given in the handbook of The Camping Club.

The following list embraces various types of tents suitable for pedestrians: -

"The Itisa." This is a single-pole tent suitable for one person, but can accommodate a second person in case of need. The weight, inclusive of tent, pole, pegs, ground sheet and stub plate, is 5 lb. 3\frac{3}{2} oz. No door is provided in this model, but a detachable gate is supplied for use at night. A fly-sheet for use in inclement weather weighs another 1 lb. 11 oz. This tent can be crected in five minutes.

For Solo Campers

"The Small A." This is a ridge tent intended for one person only. The weight, inclusive of tent, poles, ground sheet and pegs, is 5 lb. 7 oz. It is easy to erect.

"The Midge." This tent was the winner of The Camping Club's award of merit in 1934. It will accommodate one person or two if necessary. The weight is 5 lb. It is simple to erect and very stable in high winds, while the steep pitch of the roof ensures quick shedding of rain and speedy drying of the tent.



BACON AND IGGS FOR BREAKFAST

A camp chair is being used to shield the stove from draughts. The lid of a billy-can serves as frying pan. To keep the food hot, it is transferred to another lid which is placed upside down over a pan of boiling water and covered with a plate.

Cyclists, of course, can use the abovementioned, but with weight not quite so important they may prefer the following models.

"The Alaskan." This is made in two sizes, a small and a large. The small Alaskan is an excellent tent for one camper and gives ample accommodation for two. This tent is the most popular type of tent where it is desired to dispense with the use of a fly-sheet. It is very stable in rough weather and easy to crect. The weight is from 9 lb. 4 oz.

"The Half-Patrol." This tent has been designed to meet the demand for a reasonably cheap, well-made and reliable It is fitted with a permanent extension beyond the rear pole and can be made to open as doors. The weight inclusive is 8 lb. 13 oz.

Motorists, again, can consider still larger and heavier tents such as those mentioned below.

"The Cottage." This is a ridge tent of ample dimensions. When equipped with a fly-sheet and front extension, life

inside it can be very comfortable even though the weather outside is bad. It is perhaps the most popular tent used by experienced motor campers. There are two sizes, small and large. The small model weighs only 14 lb. 8 oz. It takes about fifteen to twenty minutes to erect. The large model, which can accommodate three persons, weighs from 17 lb. 7 oz. An extension to the front is useful, for meals can be eaten and prepared under a roof without using the inside of the tent.

Chalet Tent

"The Large Chalet." This tent has an entrance at one end only, and at this end the roof extends so as to form a porch. A window which is closed with press buttons is fitted at the rear. This tent is suitable for two or even three Erection takes about fifteen minutes. The weight is from 12 lb.

"The Large Alaskan." This is a good tent for two persons and accommodates



STEPRENSON

UNEXPECTED VISITORS

When this tent was erected the campers did not anticipate these visitors. Before they had breakfasted, a Wiltshire shepherd came by with his flock on the way to the downs.



A HIGHLAND CAMP

TEPHENSO

Mountaineers often find it an advantage to camp, especially in the Highlands where accommodation is not available. A site in Ross-shire near the head of Loch Maree.

a third quite comfortably. A fly-sheet can be dispensed with in this type of tent. The extended roof at front and back protects the doors and the eaves protect the walls. It is quickly crected. The weight is from 12 lb. 6 oz.

The tent is the most important item in the kit. Other items depend on the degree of comfort the camper wishes to obtain.

Protection against the elements can be further safeguarded by the use of a fly-sheet. This is of the same material as the tent and is carried over the roof, walls and doors of the tent. The fly-sheet is pegged down beyond the radius of the tent. Its main advantage is in wet weather, as the fly-sheet takes all the rain and leaves the tent dry.

An effective ground sheet is essential to keep out the cold and damp. It should be waterproof and capable of being pegged down with the tent so as to exclude draughts. The ground sheet is generally supplied with the tent, and the weight should not exceed 8 oz.

The cost is from 4s. 6d. Added comfort can be obtained by using a ground blanket over the ground sheet. The best and lightest ground blanket is made of cashmere. Heavier blankets can be obtained for a few shillings.

Comfort at Night

Experienced campers always use an eiderdown sleeping bag in preference to This bag is equivalent in blankets. warmth to three or four blankets. The cost is sometimes prohibitive, as a good bag costs in the neighbourhood of 70s. but their weight of 1 lb. 15 oz. and their smallness when rolled amply compensate for the expenditure. If an eiderdown sleeping bag cannot be obtained, the best quality fine down bag should be purchased. It costs from 18s. 6d. upwards and weighs from 2 lb. 5 oz. These restrictions in weight do not, of course, apply to the motorist camper, who can carry as a rule any amount of extra sleeping gear.

The lightweight camper should use a



A WELL-SEASONED CAMPER

There is no need to live on shor: rations in camp, says this healthy, sun-tanned enthusiast.

wedge-shaped canvas bucket for carrying water. It weighs only a few ounces and costs 2s. For washing, a similar type of canvas basin can be obtained in square or oval form for about 2s. Motorists can carry with them a finished copper water carrier with a capacity of two gallons. The weight of it is 4 lb. and the cost 19s. 6d.

Light in Camp

The motorist can run a light into his tent from the car battery by carrying with him an extra length of flex, a holder and a lamp. The pedestrian or cyclist is best endowed with an electric torch or a folding candle lantern weighing about 8 oz. and costing 3s. 6d. There are also sold candle holders for attachment to the tent pole, but the risk of fire is too great for their universal use to be recommended. A cycle lamp can also be attached to the tent pole by means of a special bracket.

Some sundries include a folding mirror fitted with special clip for fixing to tent pole, folding seats and tables, and other luxuries, and also a first-aid outfit.

Wood fires are rarely used by modern campers. For one reason there are generally restrictions against lighting fires at the average camp site, and for another, cooking utensils with a wood fire get dirty so much more quickly, and are not pleasant objects to carry from place to place in that condition.

Universally used by campers for cooking are paraffin or petrol pressure stoves, of which there are several excellent makes. Some of these stoves can be packed to carry in the pocket and weigh from 1 lb. 10 oz. upwards, and cost from 9s. 6d. For starting certain stoves, methylated spirit has practically dropped out of use and has been replaced by the solidified meta fuel. Cans are carried for spare paraffin or petrol. A windscreen will be found useful for

stoves when lighting, and these can be obtained for a few pence.

The lightweight camper will, preferably, invest in a canteen containing three separate pans for cooking. This canteen weighs only 10 oz. and costs 4s. Larger models can be obtained at moderate prices in plain aluminium. Butter boxes, milk cans, food jars, mugs or cups, plates, knives, forks and spoons, can all be obtained in aluminium or bandalasta ware, for the lightweight camper. The motorist will probably prefer something similar to what he uses in his home, for his chances of breakages in transport are not so great as the person who has to carry his kit on a bicycle or on his back.

Carrying the Kit

The most widely adopted method of carrying camping equipment for the pedestrian is in a large rucksack on the back. The best known is the Norwegian pattern model which costs from 10s. 6d. upwards. This rucksack can adequately hold all the necessary kit and food for

the pedestrian camper. It can be supplied with a detachable frame for short excursions from the camp.

Camping kit is carried on bicycles by means of pannier bags on the front and the rear. Rear pannier bags are strapped on to the back carrier of the bicycle and weigh only 1 lb. 14 oz. The cost per pair is 12s. 6d. Front pannier bags are slung over the top bar and secured by a single strap round the head of the bicycle. The weight is 10 oz. and the cost 9s. Suitable carriers for the rear pannier bags can be obtained for 2s.

So that nothing necessary should be forgotten a list should be prepared containing all essential items, and checked as the kit is assembled, and packed in the rucksack or pannier bags. Care should be taken to prevent rattling and to obviate rubbing between the various items of kit.

The articles which are first needed when arriving at camp should be the first accessible; that is, the tent, etc., should be packed last. The windscreen can be carried in the pole case. Special



CYCLE CAMPING

Two cyclists sharing a small tent find it quite practicable to carry all the necessary camping equipment without it being a burden. Above, the morning toilet in a pail borrowed from the farm.

care should be exercised in packing the stove as oil may leak if the caps over the burner hole and filling hole are not screwed down tightly. Cutlery, etc., should be carried in a wallet. A standard pedestrian kit for one person and containing personal items as well can be kept within 14 or 15 lb. If two persons are sharing a tent this can be reduced to 11 or 12 lb. each.

In selecting a site permission should always be sought from the owner or his agent. The site should not be too remote from shops or water but should, if possible, be out of sight of houses. Low-lying ground and sandy beaches should be avoided in summer as there may be trouble with midges. The shores of lakes are often difficult for pitching in view of the stony nature of the ground. Choose a site which commands a view but avoid exposed heights. Shelter from the wind and away from the public eye are desirable features characteristic of a good site. When choosing a pitch remember:

- 1. A hedge provides better shelter from wind than does a haystack or small building.
- 2. Do not pitch immediately under a tree.
- 3. Choose a higher spot than the surrounding land.
- 4. Absolutely flat ground is not essential.
- 5. Let the pitch be an open one with exposure to sunlight in the morning.
- 6. The fringe of a wood is generally a very satisfactory place.

Popularity of Caravans

Caravanning has also made great strides in recent years, and its popularity can be gauged from the fact that before the War there were over forty firms engaged in the making of caravans and trailers. There are three caravanning organizations, The British Caravanners' Club (a section of The Camping Club), The Caravan Club of Great Britain and



TEA-TIME

Motor cyclists add to their pleasures and gain a feeling of greater freedom by camping, and the necessary equipment is easily carried. By the time the tents were pitched, the kettle boiled and so to afternoon tea.



FAMILY CAMP

BLACK AND SONS GREENOCK

The children enjoy camp life and come to meals with healthy appetites. These motoring campers carry their provisions in a hamper, which also serves as a table.

Ireland, and The Trailer Caravan Club. The Royal Automobile Club and The Automobile Association also maintain caravanning departments in connexion with their organizations.

The majority of caravanners use their caravans as a means of recreation, but an increasing number live in them all the year round, changing their pitch according to inclination.

In its infancy caravanning was the hobby of a few idealists, who roamed the country leading horse and caravan. Nowadays mobile pleasure caravanning has become a popular recreation for professional and business men, who find in the open-air life a welcome relief from the strain of modern civilization.

There are four main types of caravans: Horse caravans, rigid motor caravans, folding caravans, tent and sleeping trailers.

The first named are rarely seen in this country, except when used by gipsies

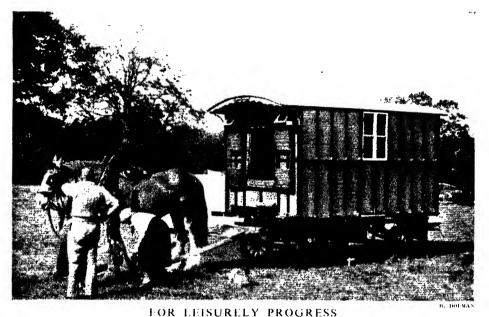
and similar nomadic types of travellers.

By far the most popular type is the motor caravan, ranging from the simplest to most luxurious fittings. Rigid caravans are usually equipped with two, three or four berths, and in some of the more expensive models, internal sanitation, separate kitchen, refrigerators, gas cookers and even baths, are provided. The aim of modern caravan builders is comfort first, and it can be truthfully stated that living in a modern caravan can be as comfortable as in the home.

Streamlining

The trend of caravan design is towards streamlining with a view to avoiding wind resistance when travelling. In some makes the same object is achieved by the front portion of the caravan sloping down towards the car.

Lighting, heating and cooking, in the modern caravan, is done by means of butane gas. This is a concentrated form of gas which is stored in containers at the pressure of twenty-two pounds per square inch. Where butane gas is not available lighting can be run off a battery which is charged during the running of the car. On the lower-priced caravans, ordinary paratfin pressure stoves are trailer is merely used for the carrying of the camp equipment, in others the trailer itself is used for sleeping two people. Then there are tent-trailers which have lean-to tents on each side of the trailer, but for obvious reasons this practice is not recommended with a



The horse-drawn caravan has many adherents, who like to explore quiet lanes and by-ways.

used for cooking and are quite satisfactory provided that ample provision

for ventilation exists in the caravan. There are two popular makes of tolding caravans which may be bought at quite reasonable prices. This form of caravanning is much nearer to tentcamping and the same degree of comfort cannot be expected as with a luxurious rigid caravan. These caravans are eminently suitable for the person who possesses a car in the 7 to 8 h.p. class, and has limited means and yet requires some of the comforts which tentcamping cannot provide. Unfolding can be done in about five minutes with these caravans.

There are many types of tent and sleeping trailers. In some types the

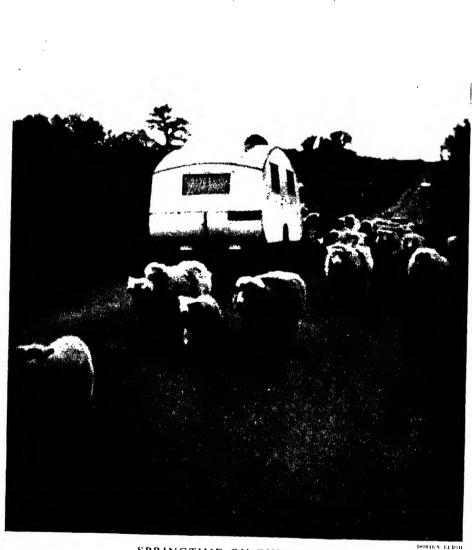
car. More than one disastrous fire has been caused by this practice.

Two important points to be remembered when purchasing or hiring a caravan for touring or camping are:---

1. The loaded weight of the caravan in relation to the power of the car which is to tow it.

2. The size of the caravan in relation to the accommodation available for garaging it.

Cars in the 7 to 8 h.p. class can be used for towing ultra-lightweight caravans and trailers, but with full-size rigid caravans the advice of the manufacturers should be sought as to the weight of caravan suitable for the car in question. The following table will serve as a useful guide:—



SPRINGTIME ON THE ROAD

Motor caravanning is becoming increasingly popular and there are many makes of caravans on the road, some of them elaborately designed and luxuriously equipped.

Weight of Make of car. caravan towed lowett, 7 h.p. 11 cwt. Ford, 8 h.p. 10 cwt. Austin, 10 h.p. 13 cwt. Rover, 12 h.p. 17 d cwt. Hillman, 14 h.p. 21 cwt. Rover, 16 h.p. 23 cwt. Ford V.8, 30 h.p. 28 cwt.

The most usual form of attachment for a caravan or trailer is by the ball and cup method. The attachment for both caravan and car should be supplied by the manufacturers or distributors of the caravan. For ease of attachment and for safety the best type of car is one where the rear portion of the chassis projects to, or beyond, the back of the body.

By joining one of the organizations which have been mentioned, the problem of securing camp sites can be easily overcome, as all those bodies issue lists of sites where one may camp. In The Camping Club list, sites suitable for caravans are specially marked as such,

and this mark is not made unless the site has previously been passed as satisfactory by an officer of the club. Site charges for caravans and trailers range from 1s. to 2s. 6d. a night. In some cases, sanitary conveniences are provided; in others, the caravanner must make these arrangements himself.

The Code for Campers compiled by The Camping Club, is reproduced here for the benefit of newcomers to the pastime. None of the rules are irksome. They are just obvious, common-sense tenets of camping practice which any ordinary person will find easy to follow.

The Code for Campers

- 1. Camp sites. Camp on private land in preference to waste land and do not forget to ask permission. Be careful to conform with any regulation of the site owner and of the local authority.
- 2. *Pires*. Do not light any wood fires without permission, or break down hedges or trees for firewood. Avoid



A MODERN TRAILER CARAVAN

This type of caravan has the advantage of being a lighter load for towing and more easily manæuvred on the road. When required, the collapsible sides and roof are soon raised into position.



MODERN LUXURY

The interior of a well-equipped caravan, complete with cupboards, table, sink, gas lighting and a gas cooker. The two latter refinements are served from portable gas containers.

lighting fires or throwing down lighted matches or cigarette ends near dry grass or bushes, taking special care in the neighbourhood of forests and plantations. Be very careful in the use of stoves.

- 3. Refuse. Do not leave litter anywhere. Place rubbish in receptacles provided or otherwise dispose of it adequately.
- 4. Sanitation. The utmost care should be taken in matters of sanitation, and campers must conform with the practice laid down in *The Camping Club Year Book*.
- 5. Country Courtesy. Use courtesy in all your dealings with local people, whose livelihood may be prejudiced by misuse of your privileges. When walking through pasture lands or cultivated fields, leave gates, etc., as you find them and take care not to damage crops, wild flowers or woodlands. When camping, seek privacy yourself and respect the privacy of others. Do not sing or play musical instruments to the annoyance

of residents. Study the reason why country ways are often different from those of the town, and remember always that your conduct may affect the reception of those campers who follow you.

The reader is urged to try the health and joy-giving recreation of camping, for it is within the reach of all of us. and the initial outlay on the outfit is soon balanced by the charges which would otherwise be paid for hotel or boarding accommodation. As explained in the previous pages, the gathering of the necessary kit is quite an easy matter and by joining a recognized organization such as The Camping Club (address, 38 Grosvenor Gardens, London, S.W.1, entrance fee 1s., annual subscription 5s.), the problem of finding camp sites is speedily overcome. Simplicity is the keynote of camping—a very desirable feature of any recreation—and the price paid is in any case small compensation for the abounding pleasure derived from living twenty-four hours a day in the open air away from men and city life.

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